SIEMENS

MAMMOMAT Novation DR

SP

Startup

System

WH AWS

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Text Emphasis

⚠WARNING	**All texts labeled with "WARNING" call attention to potential life or health-threatening risks.** ➪ **Helpful Hint**
⚠CAUTION	**All texts labeled with "CAUTION" contain information about risks and measures to avoid danger.** ➪ **Helpful Hint**
NOTICE	**All texts labeled with "NOTICE" contain additional information about the work step that follows and are intended to provide a better understanding of or a warning about unnecessary and avoidable problems.** ➪ **Helpful Hint**

Manufacturer's notes

NOTICE

The screen shots in this document are used for illustration and orientation purposes.

➪ **For this reason, the actual screen may show some differences.**

NOTICE

Installation of software not released or validated for the system is strictly prohibited!

➪ **Otherwise, the syngo software or one or more of its applications may malfunction.**

Safety Information

⚠WARNING

When performing the work steps and tests, observe the product-specific safety information contained in the documentation as well as the general safety information.

➪ See the product-specific safety information.

NOTICE

A separate account is required for each user of the syngo-based unit when the HIPAA security is enabled. The user accounts must be set up in the same way as for a MedUser!

The user accounts and passwords should be discussed with the customer or user.

➪ See "syngo Online Help" at Configuration: Local Host

Documents and tools required

Documents required

Tab. 1 Documents

Completed configuration table with all data for network configuration (Section “Collecting configuration data” in this document)
Operator manual (https://sp.med.siemens.de/de/default.asp -> Women’s Health -> MAMMOMAT Novation DR -> Sales Support -> Instructions for Use)
Data sheet of released Hard Copy Cameras (HCC)
Siemens Remote Service (SRS) Planning Guide, TD00-000.891.01....Information on http://cs.med.siemens.de -> For Service -> Product Information -> Planning -> General -> Planning Guide Siemens Remote Service
Checklist for Remote Service: COIT-000-812.09...
Installation Instructions for Router, AX00-000.815.01...
A guide for the HIS/RIS interface engineering is available on the intranet under Planning - General (print no. TDIT-000.891.03.01.02).

Test Equipment, Tools and Measurement Devices

All tools, test equipment and measurement devices, with the exception of the “standard tools”, are listed below:

Mavo monitor	97 02 432 Y0526

Abbreviations

Abbreviation	Explanation
AE Title	Application Entity Title, must be unique in a DICOM network.
BU	Business Unit (e.g. AX,CT,EM,MR,NM,...)
DHCP	Dynamic host configuration protocol. Reduces the complexity of configuring computers for TCP/IP networks. The following TCP/IP configuration can be dynamically assigned by a DHCP server: IP address, subnet masks, gateway and additional parameters like domain name.
DNS	The Domain Name System is used to resolve the TCP/IP address from a user-friendly host name.
HCC	Hard Copy Camera
HIS/RIS	Hospital - / Radiology Information System
Hub	Central point
ID	Identification
IEC	International Electrotechnical Commission
IIDC	Image Intensifier Distortion Correction
IP	Internet Protocol
ISK	Allen screws
MM	MultiMate
PG	Planning Guide
SSW	Service Software
SPDI	Siemens Parallel Digital Interface
TCP/IP	Transmission Control Protocol / Internet Protocol
TB	Collimator
VDE	Verband Deutscher Elektrotechniker (Union of German Electronics Technicians)
WINS	Windows Internet Name Service
DICOM	Digital Imaging and Communication in Medicine
IP	Internet Protocol
Q / R	Query / Retrieve
SCP	Service Class Provider
SCU	Service Class User
TCP	Transfer Control Protocol

Abbreviation	Explanation
JPEG	Joint Photographic Experts Group (a graphics format)
RAS	Remote Access Service
PPP	Point to Point Protocol
UI	User Interface
USB	Universal Serial Bus
WH AWS	Acquisition workstation for MAMMOMAT Novation DR

Definitions

Subject	Explanation
AE Title (AET)	DICOM Application Entity Title. Must be unique in a DICOM network
Conformance Statement	Each manufacturer of a DICOM device must provide a statement that provides an overview of the product's DICOM conformance.
Dongle	Device plugged into the parallel port of the computer that provides a unique ID for license handling A security or copy-protection device for commercial microcomputer programs consisting of a serialized EPROM and a number of drivers in a USB connector shell. The device must be connected to an I/O port of the computer while the program is running. Programs that use a dongle query the port at startup and at programmed intervals. The programs terminate if the port does not respond to the dongle's programmed validation code.
Hub	Distributor in a network using the star topology. A hub allows data transfer between computers
IP Address	32-bit address assigned to hosts using TCP/IP. An IP address belongs to one of four classes (A, B, C, D) and is written as 4 octets separated by periods (dotted decimal format). Each address consists of a network number, an optional sub-network number, and a host number. The network and the subnet numbers are used for routing, while the host number is used to address an individual host within the network or the sub-network. A subnet mask is used to extract network and sub-network information from the IP address. The IP is part of the socket address
Port	Part of the socket address. Different DICOM services on the same host PC may use different port numbers.
Subnet mask	The subnet mask is used to extract network and sub-network information from the IP address.
Router	A device that connects different networks. Different means either a different architecture or a different type of protocol. In a TCP/IP environment, a router is used to connect computers that are located in different IP address ranges.
Service Key	Necessary to enter the service UI. The key has to be generated prior to the initial software installation.
Socket Address	The socket address is formed from the IP and the port number.
WINS	WINS provides a distributed database for registration and querying dynamic Net-BIOS names to IP addresses.
Vendor ID	Unique identification number provided by a dongle.

Subject	Explanation
Compression	Running a data set through an algorithm to reduce the space required to store it or the bandwidth required to transmit the data set.
Remote Access Service	A service that allows remote clients running Microsoft Windows or Windows NT to dial into a network.

Important Remarks Regarding Startup

General Remarks

When the MAMMOMAT Novation DR is being configured, it must be completely cabled but not connected to the network.

NOTICE

Problems may occur when the system has been operating for too long without a reboot.

➪ **The system should be switched off completely once a week; no power to the stand!**

Start-up procedure for the entire system.

- Switch on the room's main power switch.
- Wait **5 minutes**.
- Press the ON button on the control console to activate the MAMMOMAT Novation DR. The internal monitoring system automatically performs a functional check of the MAMMOMAT Novation DR. As a result, the **dr** is displayed on the film density display on the control panel, when the detector wing is selected, to indicate that the communication with the MAMMOMAT Novation DR system is functioning.
- Switch the PC and the screen on at the acquisition workstation.
- Allow the MAMMOMAT Novation DR to warm up for at least **60 minutes** to obtain optimum image quality.

Data list

To assure an effective start-up, it is FIRST necessary to summarize the configuration data in the following table. With an existing customer network, the data should be obtained from the site administrator and entered in the table.

- Enter the configuration data in the list below.

  ➪ *) = data are essential for configuration of the WH AWS.

General Information

Parameters	Data to enter	Remarks
Service Key *)		The vendor ID of the supplied dongle is required.
Serial no. *)		The stand serial number is located on the top right side, when facing the MAMMOMAT, above the D801.
Site identification no.		ID number under which the installation is listed in the “Uptime Support Center”
Service center telephone		USC telephone number
Telephone number for SIEMENS Remote Server		
Who is the administrator responsible for the customer's network?	Name: Phone Number:	
Who is responsible for the physical network?	Name: Phone Number:	
Has the questionnaire been completed and returned to the Logistics department?	❒ Yes ❒ No	

Networking

Parameters	Data to enter	Remarks
Computer name *)		Local host name, no more than 10 characters, no special characters.
IP address *) Subnet *)		Host address and subnet mask. Only one IP address is allowed.
IP Gateway(s) address *)		IP address standard gateway, only one IP address is allowed.
WINS server IP address(es): Primary WINS Secondary WINS		IP addresses of the primary and secondary WINS server, if WINS is used.
DNS Server IP address: DNS Domain Name 1st DNS Server 2nd DNS Server		DNS domain name and TCP/IP addresses of DNS server, if DNS is used.
Local DICOM AE titles: *) - Study transfer [SCU + SCP] - Print [SCU] - Modality Work List [SCU] - Modality Performed Procedure Step [SCU]		The AET names must be unique in the network. Usually the AE titles are the host name (upper case is recommended)
DICOM Services: - Media Storage [SCU/SCP] - Query/Retrieve [SCU/SCP] - Digital Mammography Image Storage [SCU/SCP] - Storage Commitment [SCU]		DICOM Services which can be configured.

Hardcopy Camera

You will find a list of the released HCC's on the Intranet under http://cs.med.siemens.de/.

Since the image objects are quite large (approximately 26 MB), we recommend using a 100 Base-T network or a segmented LAN between the product and the hardcopy camera.

Each camera requires the following information:

Parameters	Data to enter	Remarks
Location of the hardcopy camera		
Camera manufacturer *)		
Hardcopy type *)		
Hardcopy software version in compliance with camera release?	❒ Yes ❒ No	If not, what are the discrepancies?
Gateway type	n.a.	
Gateway software version in compliance with release?	❒ Yes ❒ No	If not, what are the discrepancies?
HC-Device		This is the name as it will appear in the product user interface.
Host (Node) name *)		
IP address *)		
Port *)		
DICOM AE title *)		
Film sizes used by the customer *)		
Medium type *)	❒ Blue Film ❒ Clear Film ❒ Paper	
Film Destination *)	❒ Magazine ❒ Processor	

Are the hardcopy camera(s) released for use with this specific product?	❒ Yes ❒ No

Archive

If non-Siemens archives are used, you can find additional information in the interoperability database. “URL: http://shs.erlm.siemens.de/abteilungen/CCC/index.asp”

Did you check the CS Intranet Server? URL:www.cs.med.siemens.de, Collection: Product information/DICOM	❒ Yes ❒ No
Did you check the conformance statements?	❒ Yes ❒ No

If a DICOM archive is available, the following information is required:

Parameters	Data to enter	Remarks
Location		
Archive manufacturer type		
Archive manufacturer		
Software version		
Logical name *)		This is the name as it will appear in the product user interface.
Host (Node) Name *)		
IP address *)		Not necessary if a DNS or WINS name solution is possible.
DICOM AET and port number *) Storage SCP Q/R SCP	 AET: Port: AET: Port:	
DICOM service: Storage commitment		
Study root *) Patient root *) Patient / Study only *)	❒ Yes ❒ No ❒ Yes ❒ No ❒ Yes ❒ No	

Viewing Stations

If non-Siemens workstations are used, you can find additional information in the interoperability database.

“URL: http://shs.erlm.siemens.de/abteilungen/CCC/index.asp”

Did you check the interpretability database?	❒ Yes ❒ No
Did you check the conformance statements?	❒ Yes ❒ No

For each viewing station, the following information is required:

Parameters	Data to enter	Remarks
Location		Not necessary for the configuration, but useful as information for distinguishing between viewing stations.
Viewing station manufacturer type *)		
Viewing station manufacturer		
Software version		
Logical name *)		This is the name as it will appear in the product user interface.
Host (Node) Name *)		
IP address *)		Not necessary if a DNS or WINS name solution is possible.
DICOM AET and port number *) Storage SCP Q/R SCP	 AET: Port: AET: Port:	 If necessary, check the DICOM conformance statement.
syngo-based viewing station?	❒ Yes ❒ No	
Study root *) Patient root *) Patient / Study only *)	❒ Yes ❒ No ❒ Yes ❒ No ❒ Yes ❒ No	

Acquisition System

The following information is necessary for each system:

Parameters	Data to enter	Remarks
Location		Not necessary for the configuration, but useful as information for distinguishing between viewing stations.
Acquisition system manufacturer type		
Software version		
Logical name *)		This is the name as it will appear in the product user interface.
Host (Node) Name *)		
IP address *)		Not necessary if a DNS or WINS name solution is possible.
DICOM AET and port number *) Storage SCP Query Retrieve Q/R SCP	 AET: Port: ❒ Yes ❒ No ❒ Yes ❒ No AET: Port:	If necessary, check the DICOM conformance statement.
Study root *) Patient root *) Patient / Study only *)	❒ Yes ❒ No ❒ Yes ❒ No ❒ Yes ❒ No	

RDIAG Server (LAN via Router)

General information about data security and technical information about routers is available on the Intranet under:

http://cs.med.siemens.com/ - > SRS Connectivity Toolkit

For more information about installation of “Siemens Remote Services” Refer to the document **SP00-000.816.02...**.

Parameters	Data to enter	Remarks
Host name (FTP)		“lux09505” for RDIAG Fürth “SRSACC1” for RDIAG Newark “sgpt806x” for RDIAG Singapore
IP address of Access server (FTP)		194.138.39.18 for RDIAG Europe by LAN 129.73.116.92 for RDIAG America by LAN 194.138.243.178 RDIAG Asia_Pacific

If not yet done:

- Completes the “SRS final configuration checklist” and sends it to the destination specified (written in the checklist) to set up the router in the Remote Server.
  - ➪ The new client is then entered in the Remote Server database.
  - ➪ To verify the connection, the system must be available in the SRS database.

Image Import/Export Server

For File & Image transfer:

Parameters	Data to enter	Remarks
Host name		
IP address		
Name of drive and share		

NOTICE

Details about the data to be entered are included in the syngo software input windows.

- ➪ **Please enter valid data.**

General

System installation requirements

The requirements for installation of the WH AWS are described in the corresponding document:

“Planning Guide“ Pub. No.: SPB7-250.891.02.xx.xx

General remarks

- When the system is being configured, it must be completely cabled but not connected to the network.

Special network information

The cables for the network are not supplied in the product delivery. There is a standard IP address, entered by the factory, which may conflict with addresses in your network.

The MAMMOMAT Novation DR uses defined, hard-coded IP addresses for ARRAY (192.168.1.1) and BRICK (192.168.1.2) communication.

- Check the IP address provided by the hospital administrator for the WH AWS, to make sure there is no conflict. The IP addresses from the range 192.168.1.0, subnet mask 255.255.255.0, cannot be used from the customer's network.

Screen saver

NOTICE

Do not activate any of the screen savers (OpenGL).

➪ **The system will hang.**

Start up the WH AWS

Dongle

The dongle (labeled FLEXID=X-xxxxxxxx) supplied in the shipment must be connected to the USB port.

- The WH AWS is switched off.
- Install the dongle at the USB port.

Service license

A service key is required to configure the syngo-based product. The service key (paper printout) for installation is shipped with the system and is located in the technical documentation binder.

  ➪ This key is only valid for 3 months.

  ➪ To generate a new service key valid for 12 months, contact your “Uptime Support Center.”

- The paper printout of the service key must be removed from the technical documentation binder before the system is turned over to the customer, to prevent the customer from gaining access to the service software.

Start WH AWS

NOTICE

Problems may occur when the system has been operating for too long without a reboot.

  ➪ **The system should be switched off completely once a week; no power to the stand!**

Start-up of the entire system.

1. Switch on the main power in the WH AWS room.
2. Wait **5 minutes**.
3. Press the ON button on the control console to activate the MAMMOMAT Novation DR.

   ➪ The internal monitoring system automatically performs a functional check of the MAMMOMAT Novation DR. As a result, "dr" is displayed on the film density display on the control panel when the detector wing is selected, to indicate that the communication with the MAMMOMAT Novation DR system is functioning.
4. Switch the PC and the screen on at the acquisition workstation.
5. Proceed with the section "Configuration" in this documentation.

User Settings

This section describes how to set up the keyboard and application language.

NOTE	**Only the languages English, German, Spanish and French are supported.**

Country-specific keyboard layout (required for non-US keyboards)

- Select **Options > Configuration** from the user software interface.
  - ➪ The following window is displayed.

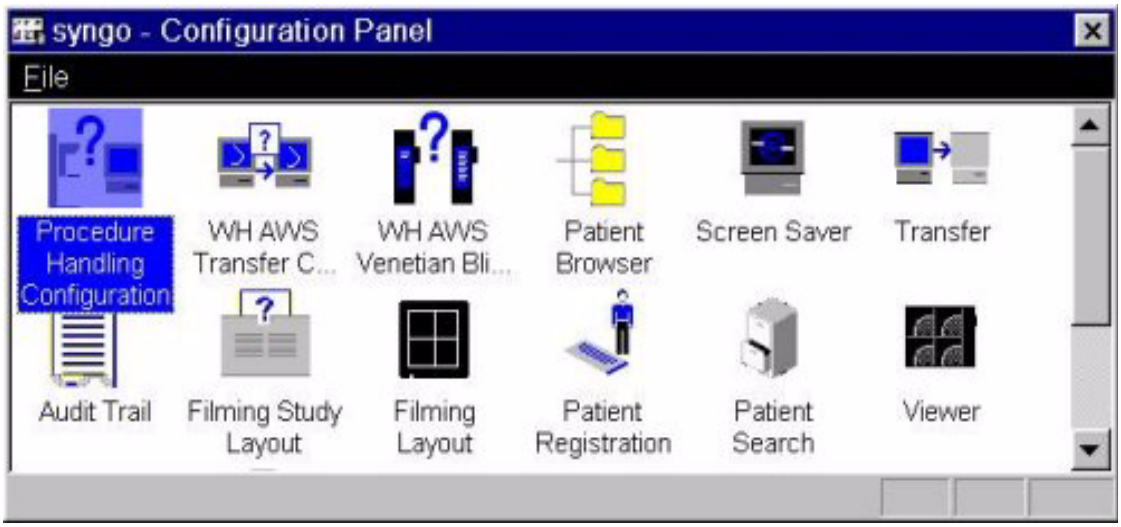

Fig. 1: Configuration panel 1

- Scroll down the window.

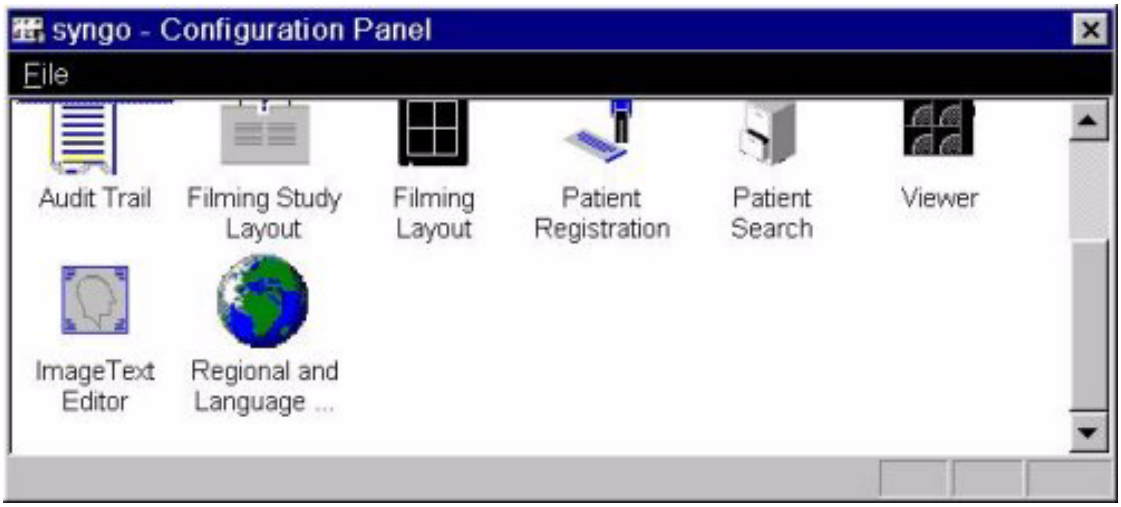

Fig. 2: Configuration panel 2

- Double-click **Regional and Language Options.**

Regional and Language Options
Regional Options
Languages
Text services and input languages
To view or change the languages and methods you can use to enter text, click Details.
Details...
Supplemental language support
Most languages are installed by default. To install additional languages, select the appropriate check box below.
Install files for complex script and right-to-left languages (including Thai)
Install files for East Asian languages
OK
Cancel
Apply

Fig. 3: Languages

- Select **Language** tab.
- Click on **Details**.

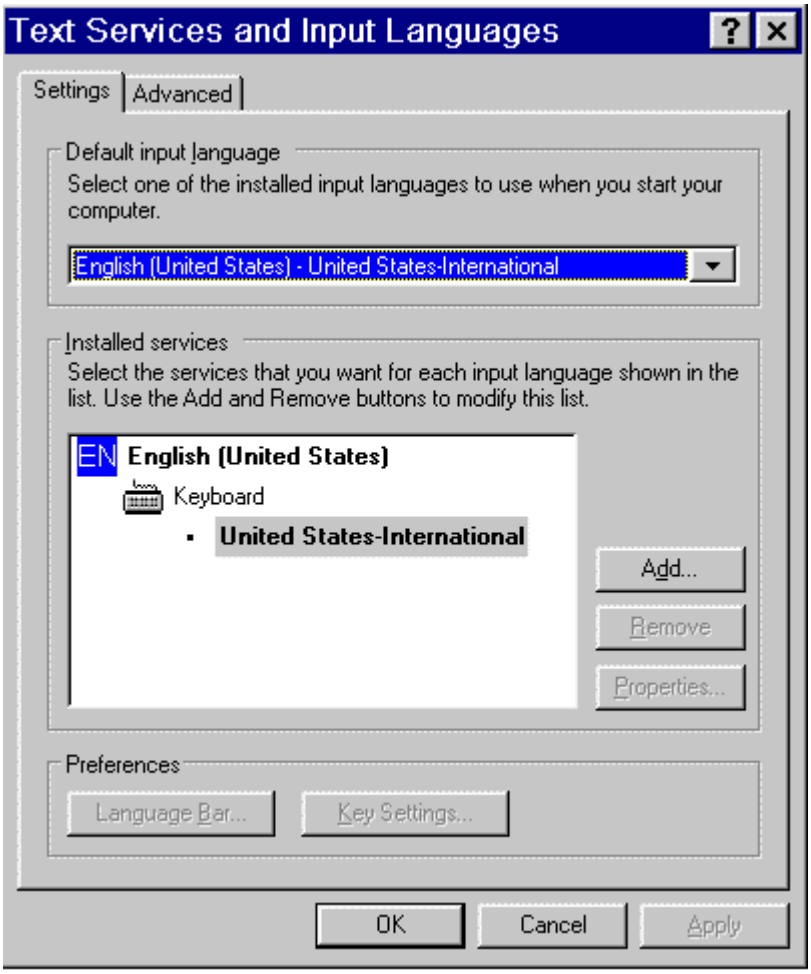

Fig. 4: Language Settings

- Select the language (only English, Spanish, German and French are supported) under **Default input language** or use the **Add** button to install your language.

Fig. 5: Input Language

- Select one of the installed input languages and keyboard layout.
- Click on **OK**.
- Confirm with **Apply**.
- Click on **OK**.
- Confirm with **Apply**.
- Click on **OK**.
- Close the **Configuration Panel**.

Preferred User Interface Language (not required for English)

- Select **Options** < **Configuration** from the Viewer interface.

The following window appears.

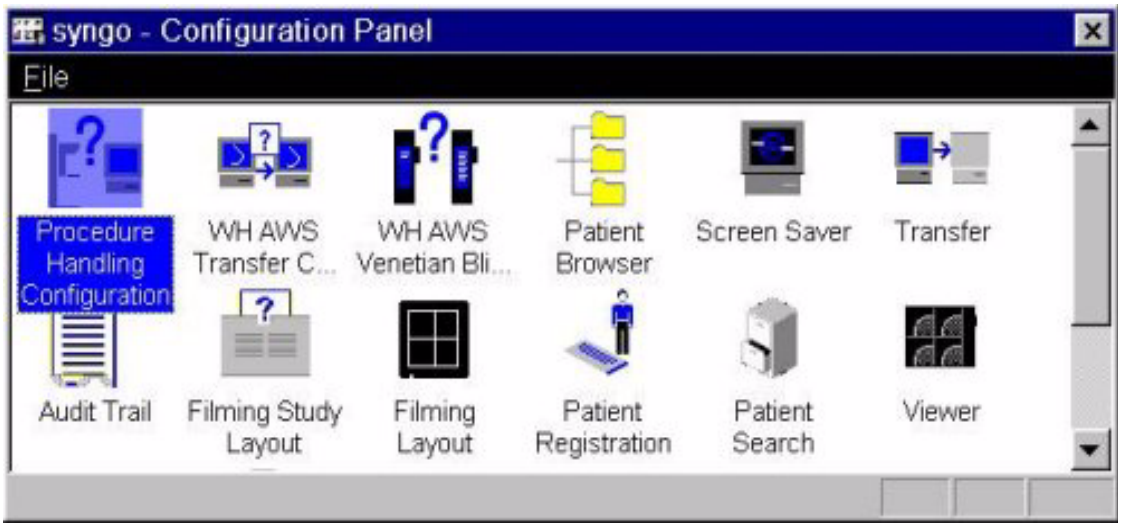

Fig. 6: Configuration panel 1

- Scroll down the window.

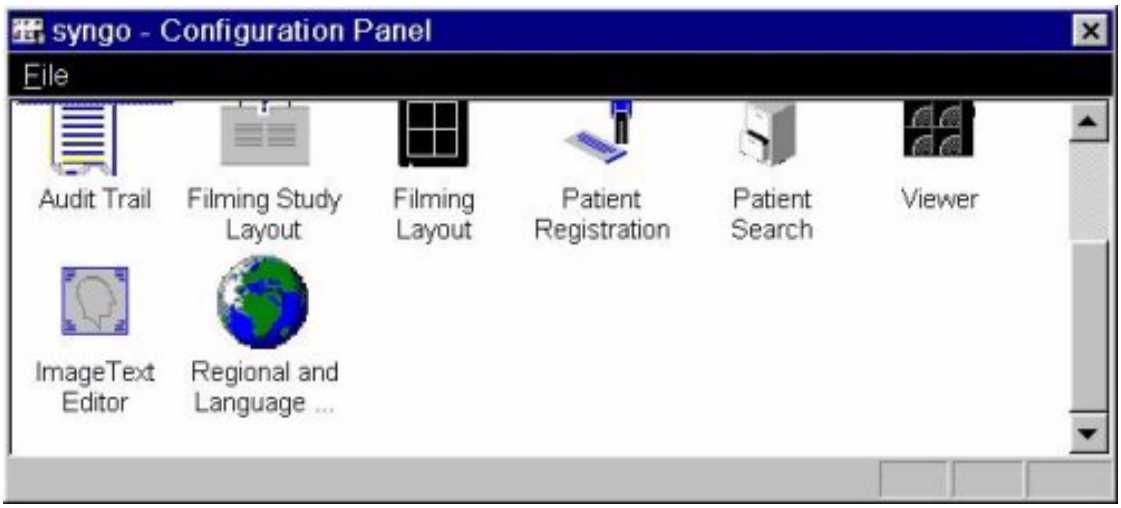

Fig. 7: Configuration panel 2

- Double-click **Regional and Language Options.**

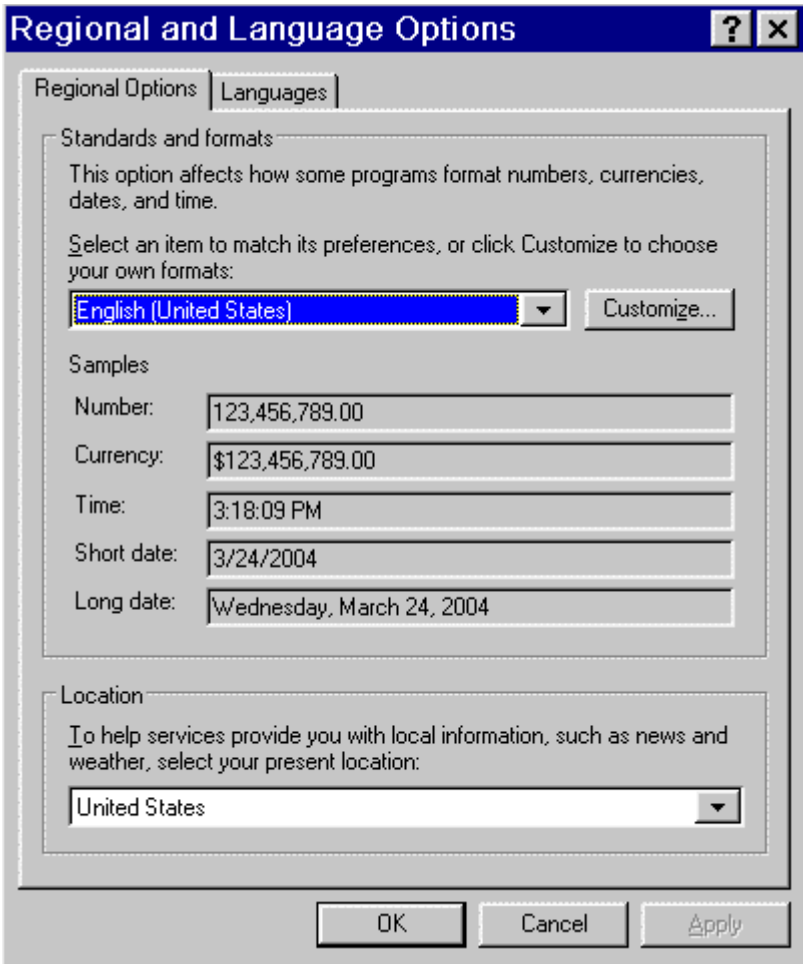

Fig. 8: Regional Options

- Select **Regional Options** tab.
- Select the language (only English, Spanish, German and French are supported), and location.

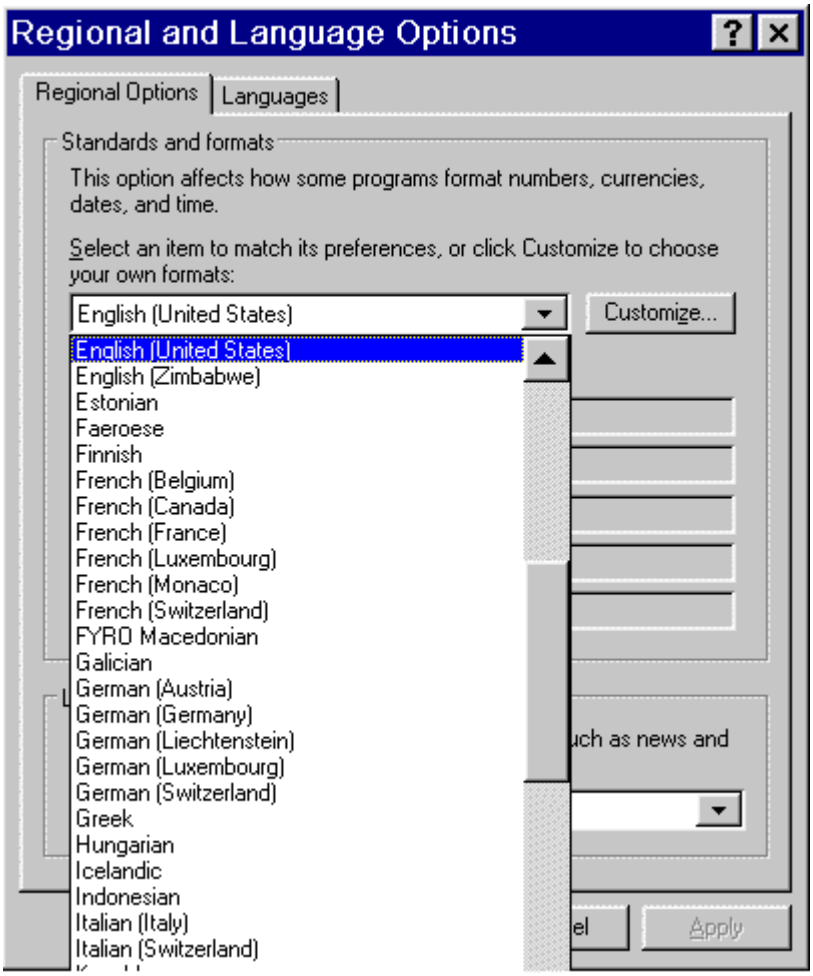

Fig. 9: Selecting Regional Options

- Click on **Apply**.
- Click on **OK**.
- Close the **Configuration Panel**.

syngo configuration

This chapter describes how to configure the WH AWS within the syngo service software.

Log into the service software.

- Select **Options > Service -> Local Service** in the window menu header

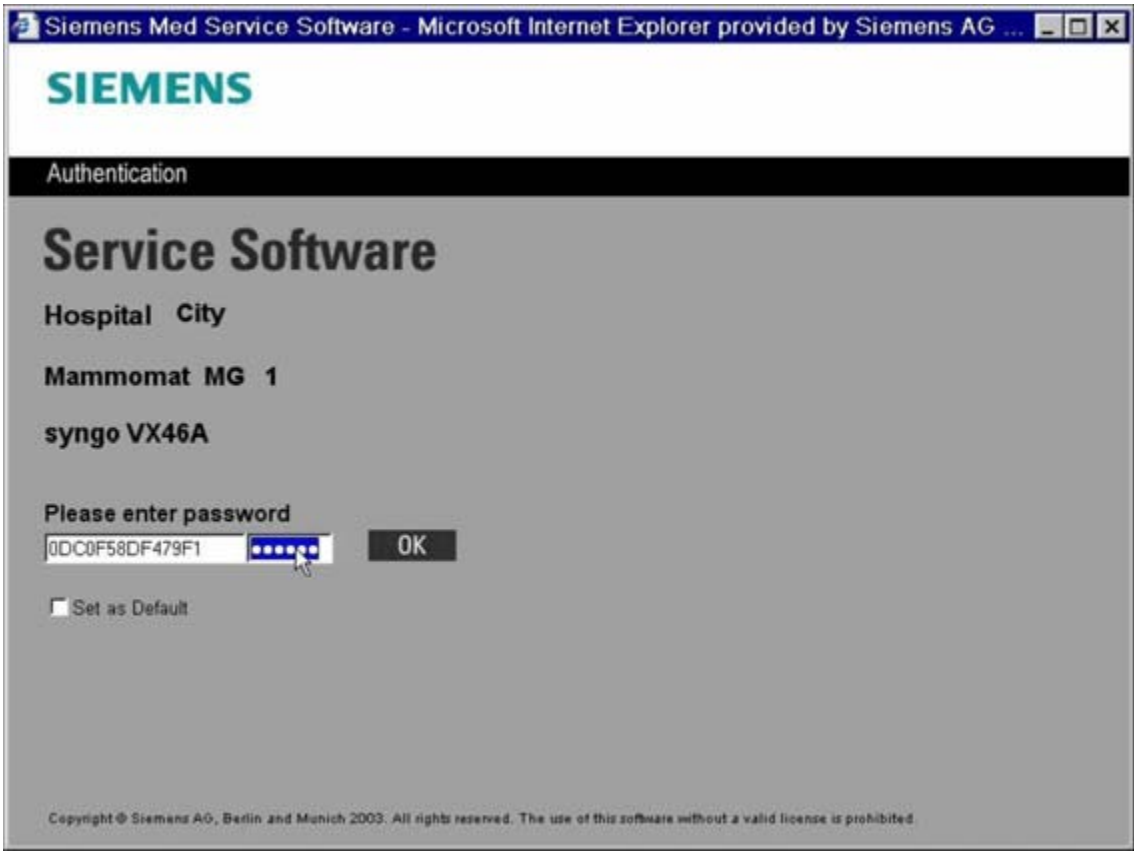
Siemens Med Service Software - Microsoft Internet Explorer provided by Siemens AG
SIEMENS
Authentication
Service Software
Hospital City
Mammomat MG 1
syngo VX46A
Please enter password
0DC0F58DF479F1
OK
Set as Default
Copyright © Siemens AG, Berlin and Munich 2003. All rights reserved. The use of this software without a valid license is prohibited.

Fig. 10: Authentication Page

- Enter the service key (6 characters in 2nd field) in the syngo software screen.
- Select **Set as Default.**
- Confirm the screen with **OK**.

  ➪ The Service **Home Menu** then appears.

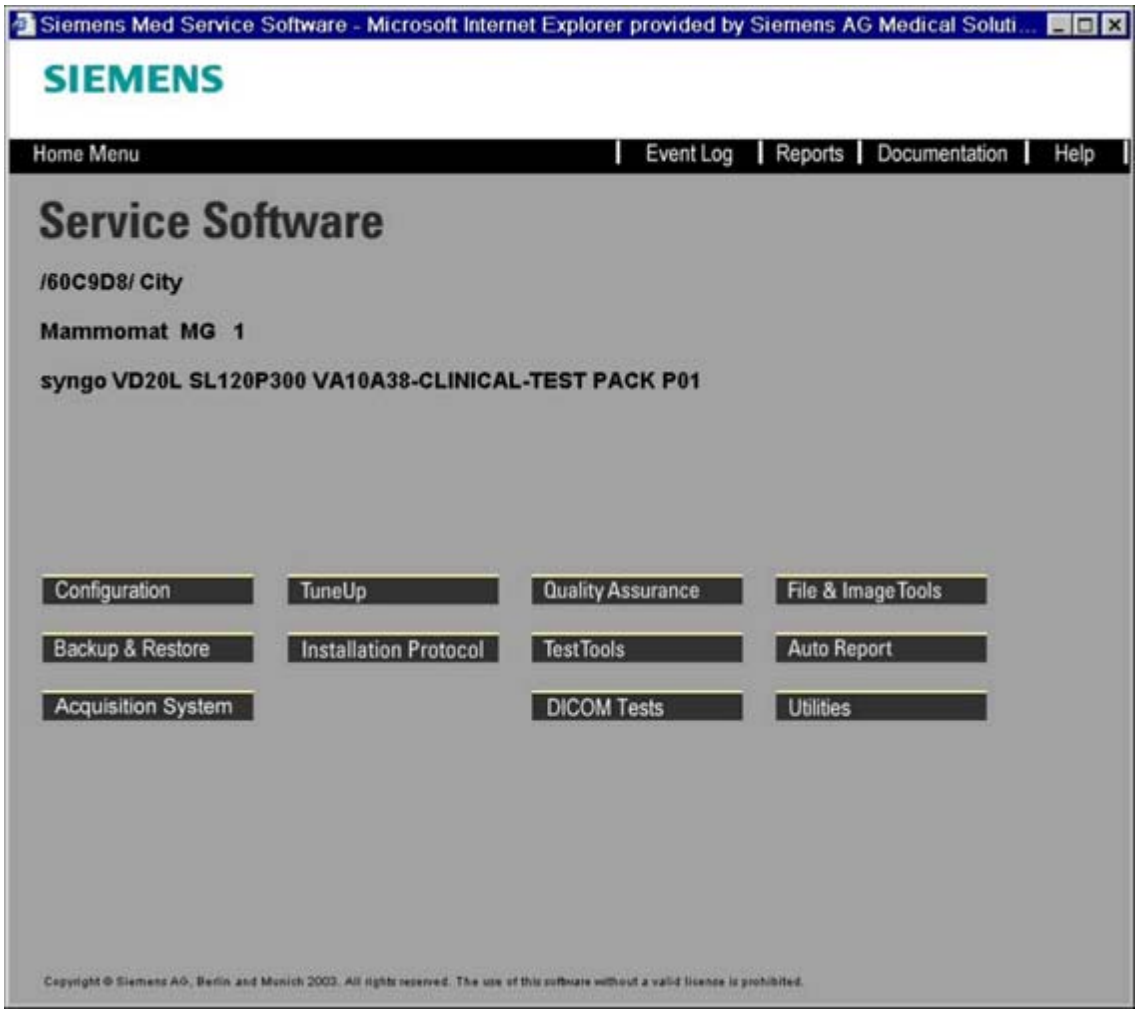

Fig. 11: Service Home Menu

- Select **Configuration**.

  ➪ The Configuration selection menu appears. It shows the default settings that should be used for the MAMMOMAT Novation DR.

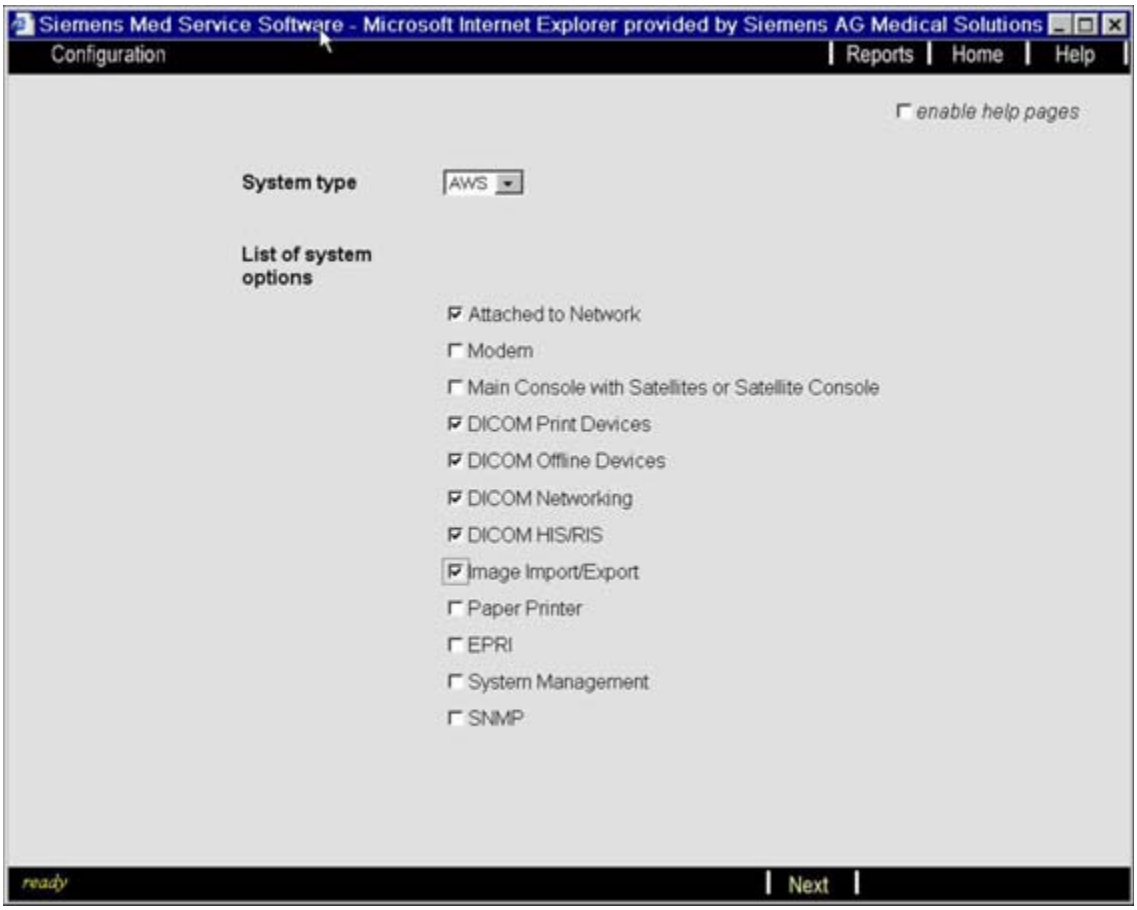

Fig. 12: Configuration - System Options

Connected to Network	The system is connected to a network
Modem	Modem RAS, not used for the WH AWS. Do not select.
Main Console with Satellite or Satellite Console	The MAMMOMAT Novation DR does not use a Satellite Console. Do not select.
DICOM Print Devices	DICOM Basic Print service for laser cameras
DICOM Offline Devices	DICOM Media Storage on off-line media like MOD and CD-R
DICOM Networking	DICOM services to DICOM PACS systems
DICOM HIS/RIS	DICOM Hospital Information System/Radiology Information system
Image Import/Export	Import/export DICOM images from/to the file system
Paper Printer	Paper formats for postscript printers
EPRI	Electronic Patient Record Interface, if available
System Management	Siemens System Management funtionality
SNMP	Simple Network Managed Protocol
Enabling Help Pages	This enables/disables the guided help pages. Experienced users may disable them.

- Select the check boxes according to your environment.
  - ➪ The (Fig. 12 / p. 32) shows the default settings that should be used for the MAMMOMAT Novation DR.
- Select **Next** in the action bar.

NOTICE

To exit the configuration, ALWAYS select the "Finish" and then the "Home" buttons.

➪ **Otherwise the entered data are lost.**

- Select "**Site Info**" within the configuration menu and enter at least the data for:
  - System serial number
  - handover date
  - customer data
- Click "**Save**".

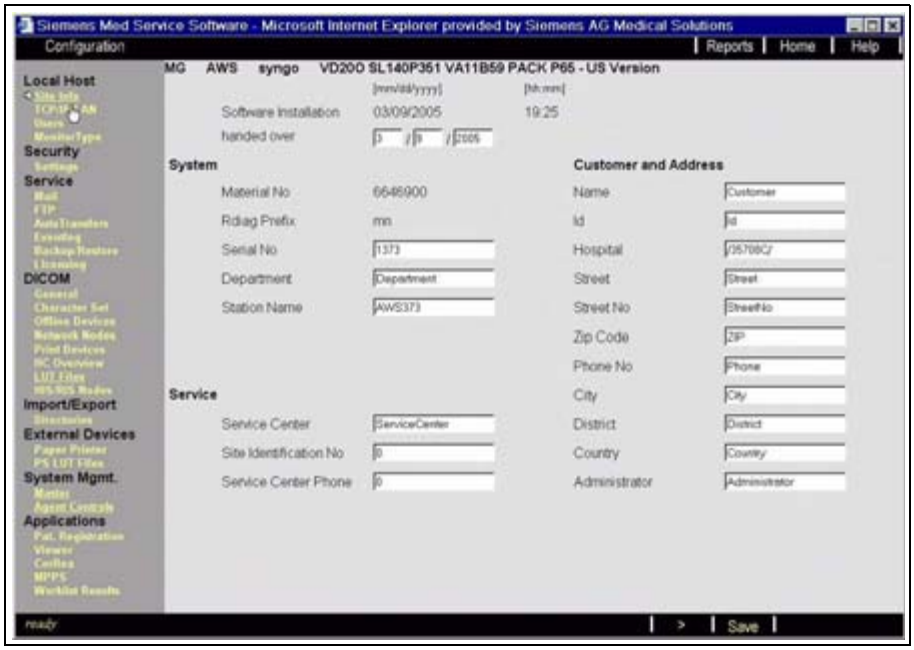

Fig. 13: Site_Info

- Select "**TCP/ IP**" within the configuration menu and enter the data for:
  - TCP IP address (only one IP addresses is allowed).
  - Subnet mask.
  - Gateway address (only one IP addresses is allowed).
  - Optional settings, DNS, WIN, DHCP (permanent IP address).

- Click “**Save**”

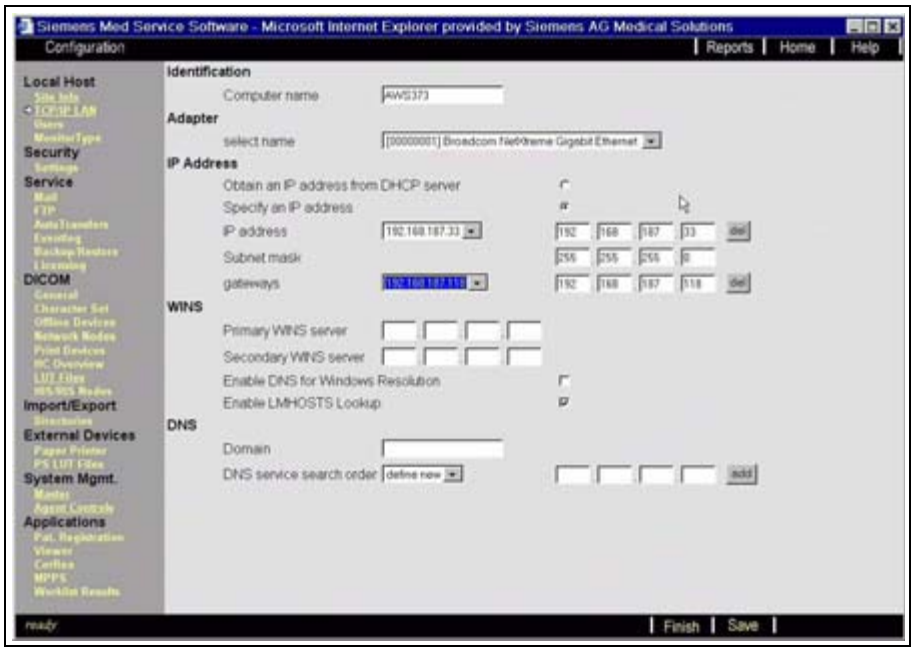

Fig. 14: TCP_IP

- Select “**DICOM/ General**” within the configuration menu and check or edit the data for local AE titles of the WH AWS.
- Click “**Save**”.

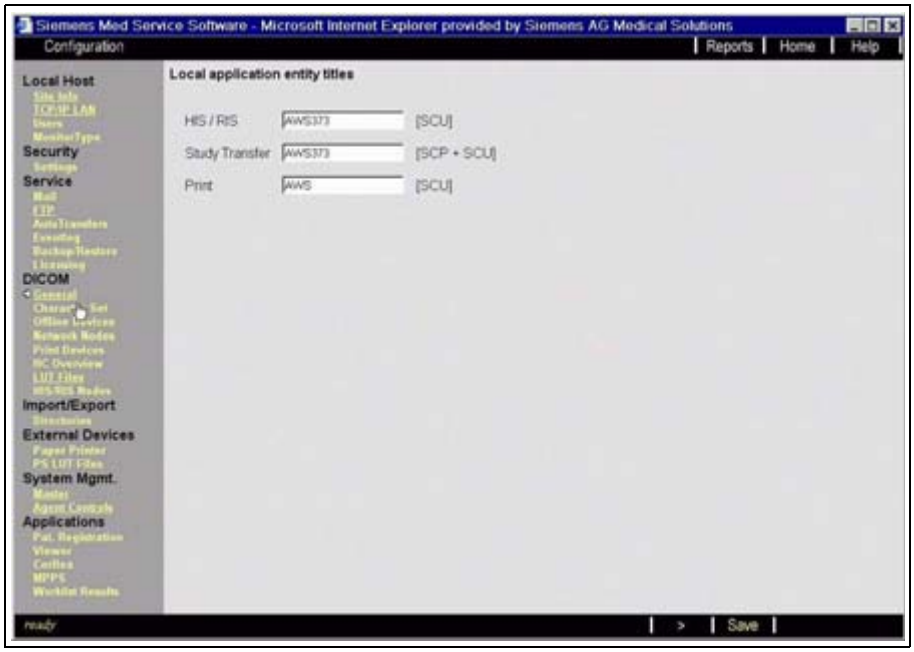

Fig. 15: Local AET

- Select “**DICOM/ Offline Devices**” within the configuration menu and configure CD drives if applicable. (For more information click “Help” within the menu).
- Click “**Save**”.
- Select “**DICOM/ Network Nodes**” within the configuration menu to configure network nodes, e.g. workstation, archive systems.

- Enter the data for each network node to be configured and click “**Save**”
  - Host Name.
  - IP Address of the network node.

Fig. 16: Network_nodes_host

- Click “**>**”

- Enter the data for each network node to be configured and click “**Save**”. For more information, see the section “Hints/ Notes” in this documentation.
  - AE Title of the network node.
  - Port of the network node.
  - Select services of the network node, e.g. Storage, Storage Commitment, Query, Retrieve.

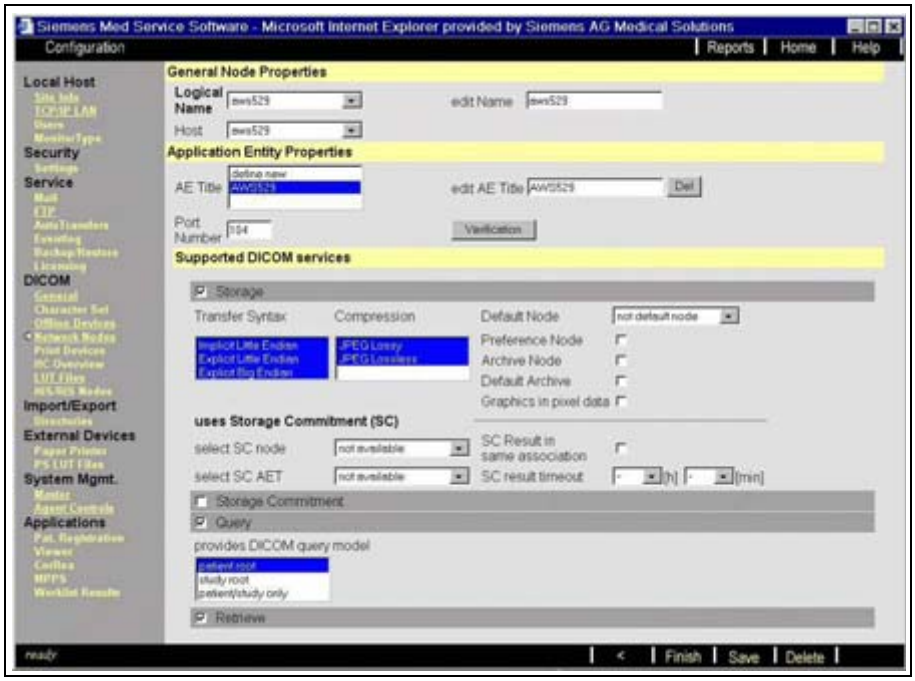

Fig. 17: Network_nodes_general

- Select “**DICOM/ Print Devices**” within the configuration menu. For configuration, refer to the section “Configuration of DICOM Camera” in this documentation and enter the required data.
- Select “**DICOM/ HIS/ RIS Node**” within the configuration menu for configuring the “DICOM worklist” if applicable.

- Enter the data for the DICOM worklist server and click “**Save**”
  - Host Name.
  - IP Address of the server.

Fig. 18: HIS_RIS host

- Click “**>**”
- Enter the data for the DICOM worklist services.

  For more information, see the section “Hints/ Notes” in this documentation.

- AE Title of the worklist server.
- Port of the worklist server
- Select “**Basic Worklist**”
- Additional services of the network node, e.g. “Performed Procedure Step” if applicable.

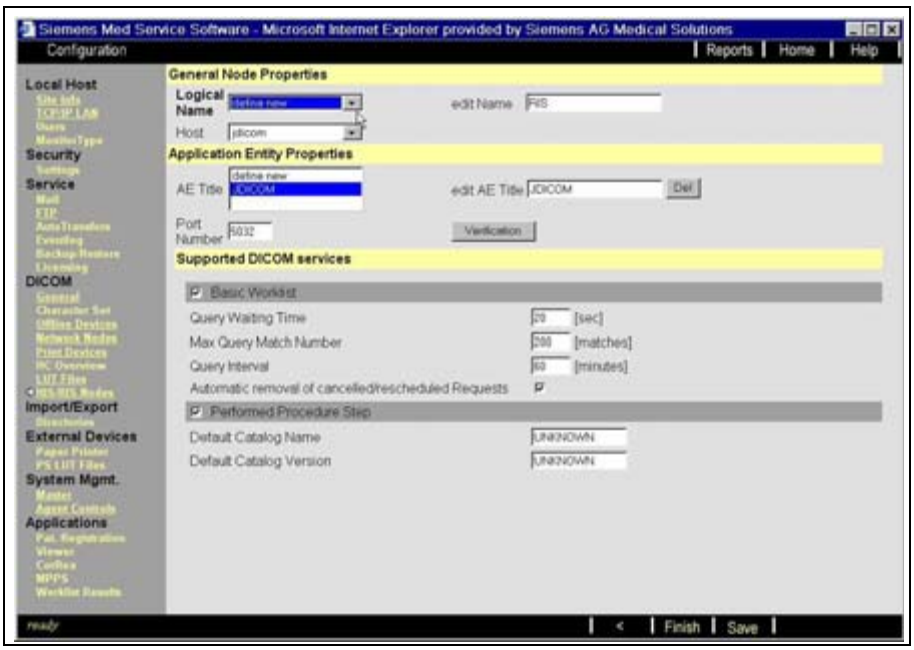

Fig. 19: Worklist

- Click “**Save**”

Finishing and checking the configuration

- After configuration of the WH AWS click “Home” and confirm the message to reboot the system with “OK”.
  - ➪ The WH AWS will reboot.
- Connect the WH AWS the to the hospital network.
- Check the connectivity to each configured network node within the local service/ configuration/ DICOM menu (network nodes or DICOM Print Devices) by using “Verification."
  - ➪ If the connectivity test fails, check the configured data on the WH AWS and on the destination node.
  - ➪ Try a ping command “local service/ Utilities/ Escape to OS” to the destination node.
  - ➪ Try the DICOM test tools

Options configuration

Installation of a paper printer

1. Log in as Windows XP **Administrator**
2. Click on **Start**, select **Properties**, and then **Printers**

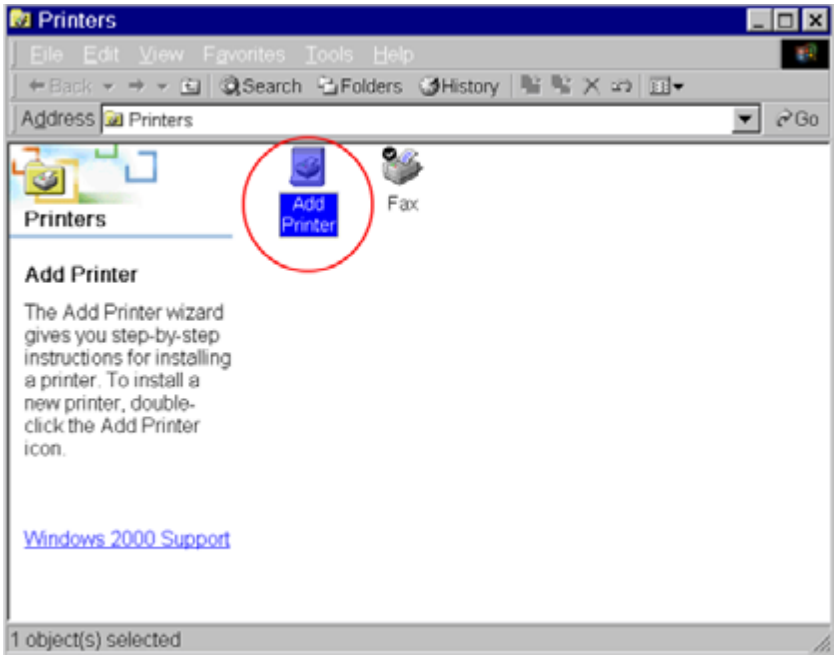
Printers
File Edit View Favorites Tools Help
Back Search Folders History
Address Printers
Go
Add Printer
Fax
Printers
Add Printer
The Add Printer wizard gives you step-by-step instructions for installing a printer. To install a new printer, double-click the Add Printer icon.
Windows 2000 Support
1 object(s) selected

Fig. 20: Configuring a Paper Printer - Add a new Printer

Add Printer Wizard
Welcome to the Add Printer Wizard
This wizard helps you install a printer or make printer connections.
If you have a Plug and Play printer that connects through a USB port (or any other hot pluggable port, such as IEEE 1394, infrared, and so on), you do not need to use this wizard. Click Cancel to close the wizard, and then plug the printer's cable into your computer or point the printer toward your computer's infrared port, and turn the printer on. Windows will automatically install the printer for you.
To continue, click Next.
< Back
Next >
Cancel

Fig. 21: Printer Wizard

When using a USB printer, the computer will recognize the printer via plug & play.

In that case you can follow the computer's instructions.

If problems occurred with the driver or you are using a parallel port printer or network printer, continue with the following instructions.

Local printer

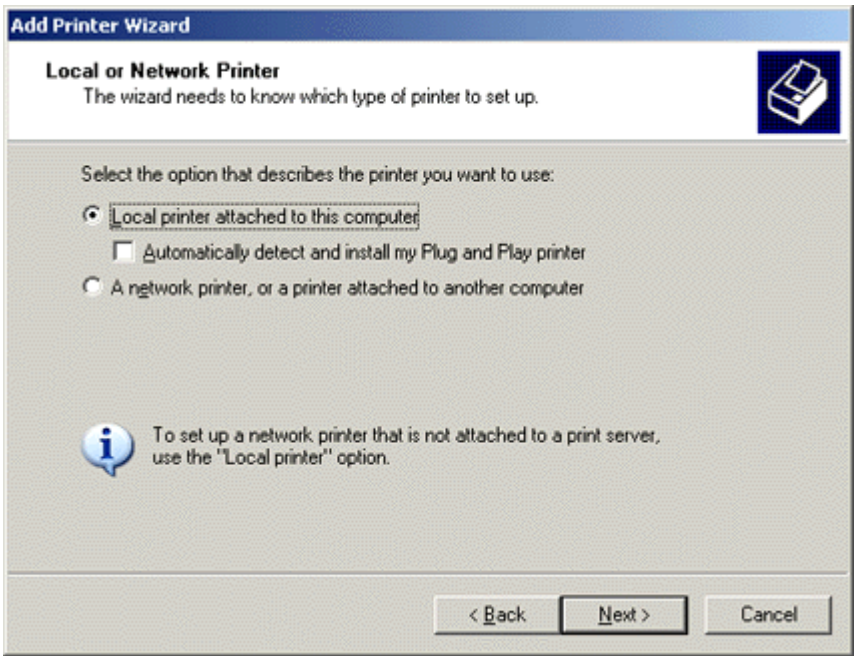
Add Printer Wizard
Local or Network Printer
The wizard needs to know which type of printer to set up.
Select the option that describes the printer you want to use:
Local printer attached to this computer
Automatically detect and install my Plug and Play printer
A network printer, or a printer attached to another computer
To set up a network printer that is not attached to a print server, use the "Local printer" option.
< Back
Next >
Cancel

Fig. 22: Printer Wizard - Local Printer

Select **Local printer** and select the corresponding port of that printer.

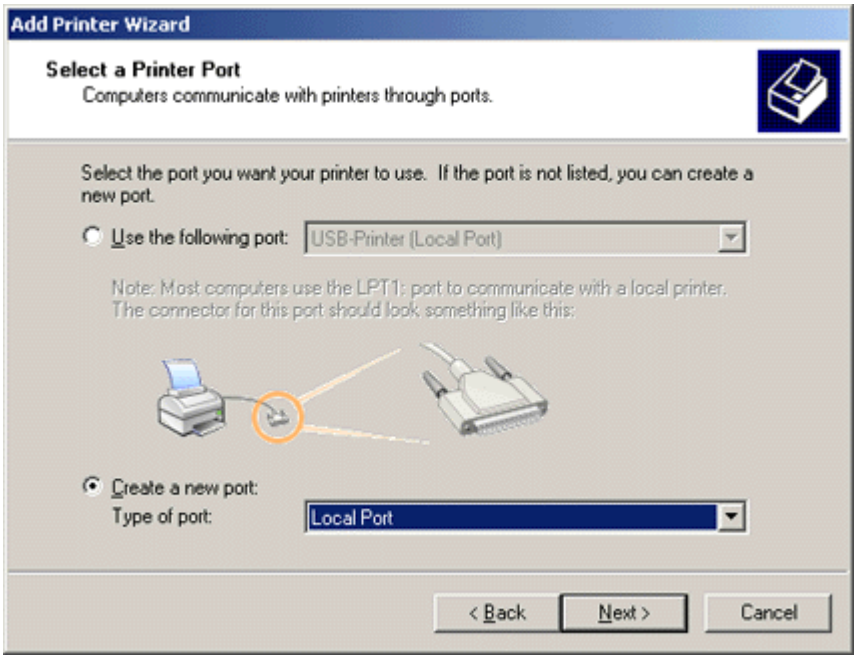
Add Printer Wizard
Select a Printer Port
Computers communicate with printers through ports.
Select the port you want your printer to use. If the port is not listed, you can create a new port.
Use the following port:
USB-Printer (Local Port)
Note: Most computers use the LPT1: port to communicate with a local printer. The connector for this port should look something like this:
Create a new port:
Type of port:
Local Port
< Back
Next >
Cancel

Fig. 23: Printer Wizard - Select a local port (USB or parallel port)

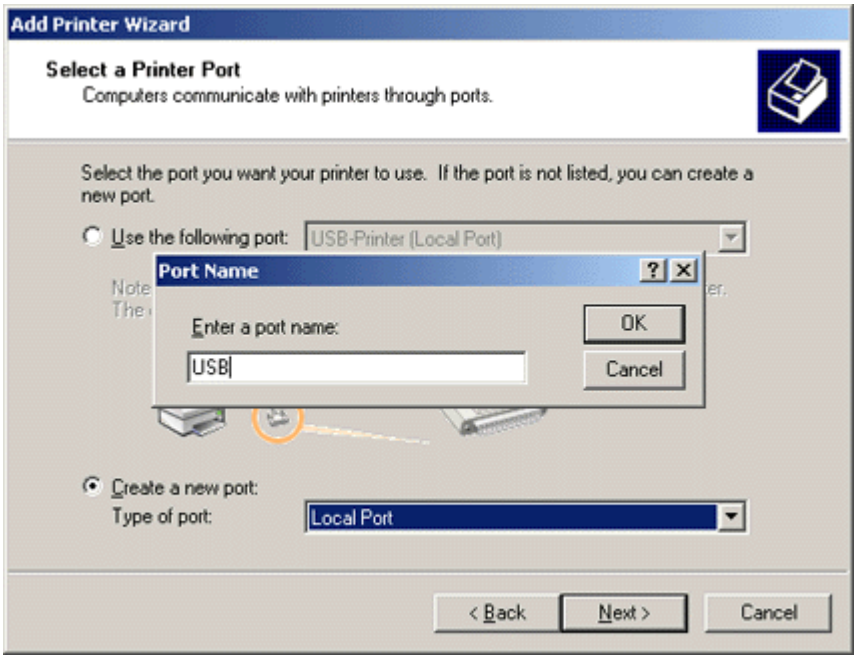
Add Printer Wizard
Select a Printer Port
Computers communicate with printers through ports.
Select the port you want your printer to use. If the port is not listed, you can create a new port.
Use the following port:
USB-Printer (Local Port)
Port Name
Enter a port name:
USB
OK
Cancel
Create a new port:
Type of port:
Local Port
< Back
Next >
Cancel

Fig. 24: Printer Wizard - new port = USB

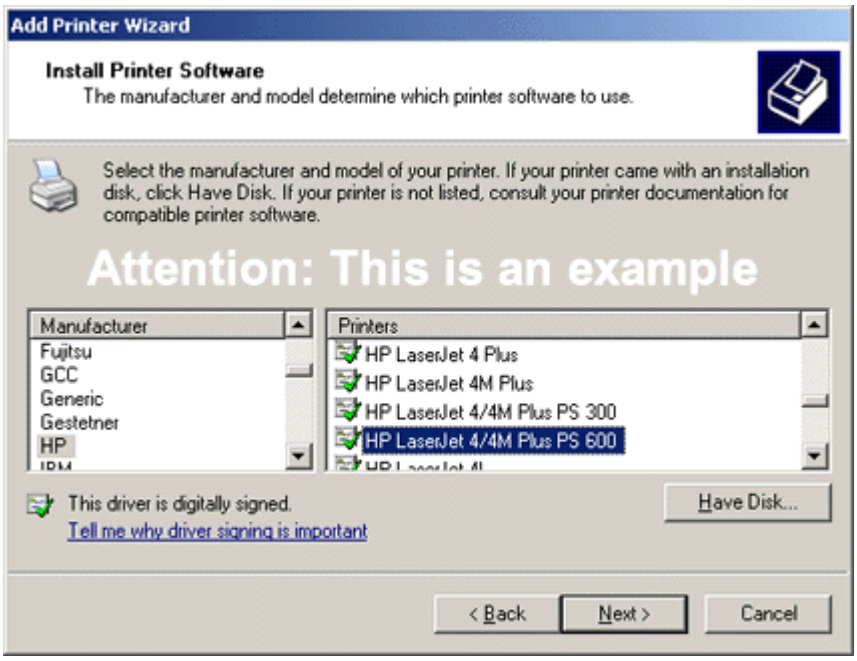
Add Printer Wizard
Install Printer Software
The manufacturer and model determine which printer software to use.
Select the manufacturer and model of your printer. If your printer came with an installation disk, click Have Disk. If your printer is not listed, consult your printer documentation for compatible printer software.
Attention: This is an example
Manufacturer
Fujitsu
GCC
Generic
Gestetner
HP
Printers
HP LaserJet 4 Plus
HP LaserJet 4M Plus
HP LaserJet 4/4M Plus PS 300
HP LaserJet 4/4M Plus PS 600
This driver is digitally signed.
Tell me why driver signing is important
Have Disk...
< Back
Next >
Cancel

Fig. 25: Printer Wizard - select a local printer

Select the correct manufacturer and the model of the customer's printer.

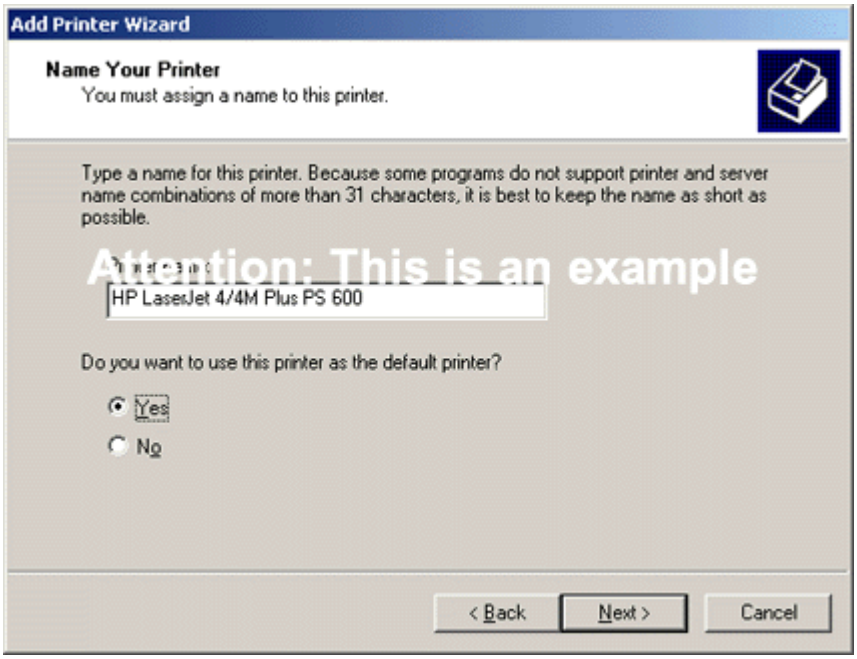
Add Printer Wizard
Name Your Printer
You must assign a name to this printer.
Type a name for this printer. Because some programs do not support printer and server name combinations of more than 31 characters, it is best to keep the name as short as possible.
Attention: This is an example
HP LaserJet 4/4M Plus PS 600
Do you want to use this printer as the default printer?
Yes
No
< Back
Next >
Cancel

Fig. 26: Printer Wizard - name the printer

Assign the printer a name (usually the model name of the printer).

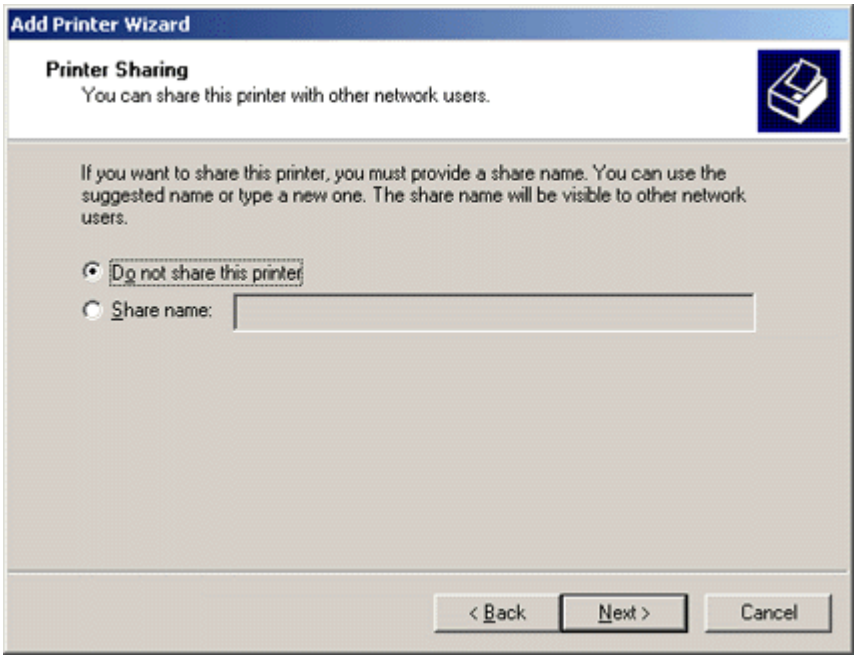
Add Printer Wizard
Printer Sharing
You can share this printer with other network users.
If you want to share this printer, you must provide a share name. You can use the suggested name or type a new one. The share name will be visible to other network users.
Do not share this printer
Share name:
< Back
Next >
Cancel

Fig. 27: Printer Wizard - do not share a local printer

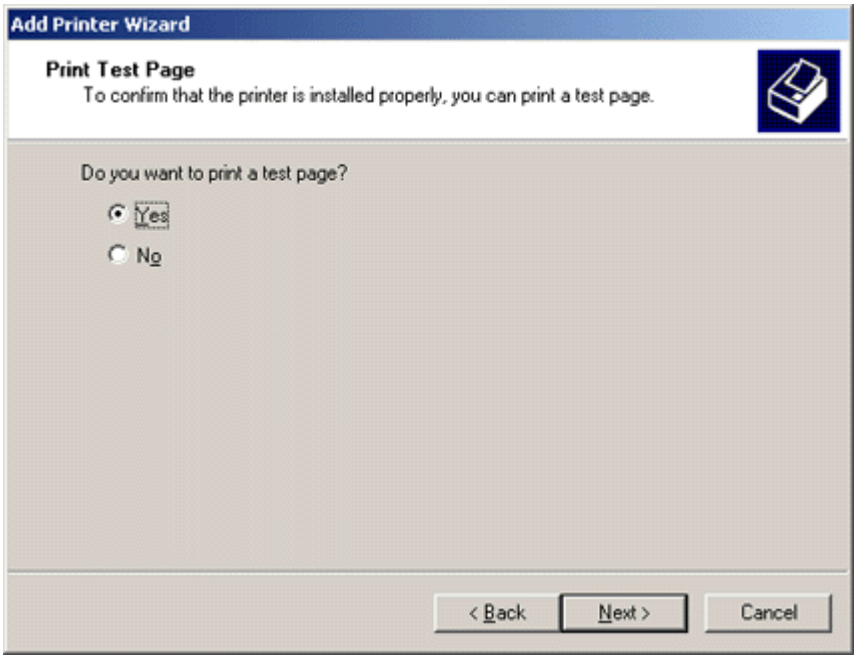
Add Printer Wizard
Print Test Page
To confirm that the printer is installed properly, you can print a test page.
Do you want to print a test page?
Yes
No
< Back
Next >
Cancel

Fig. 28: Printer Wizard - print a test page

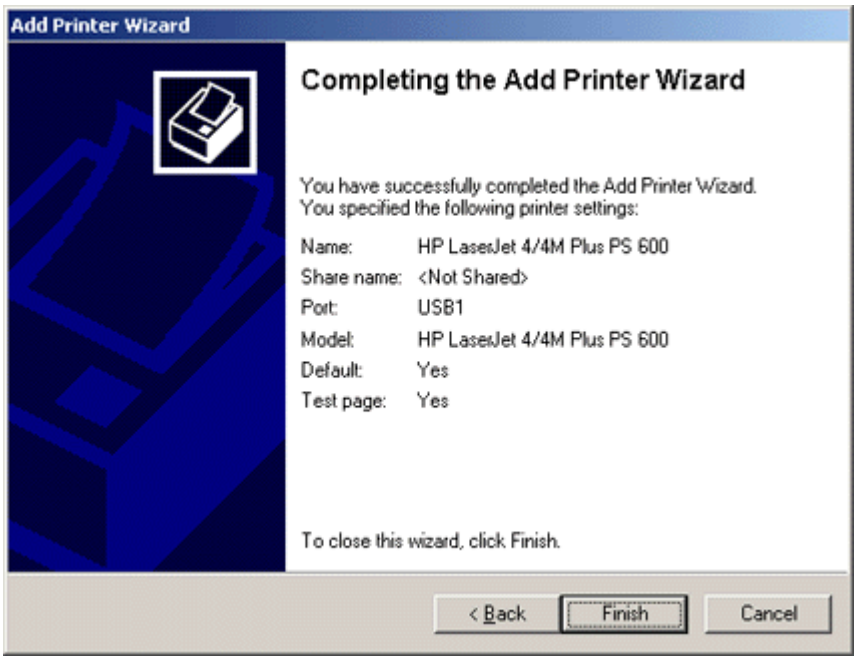

Fig. 29: Printer Wizard - finish and close the wizard

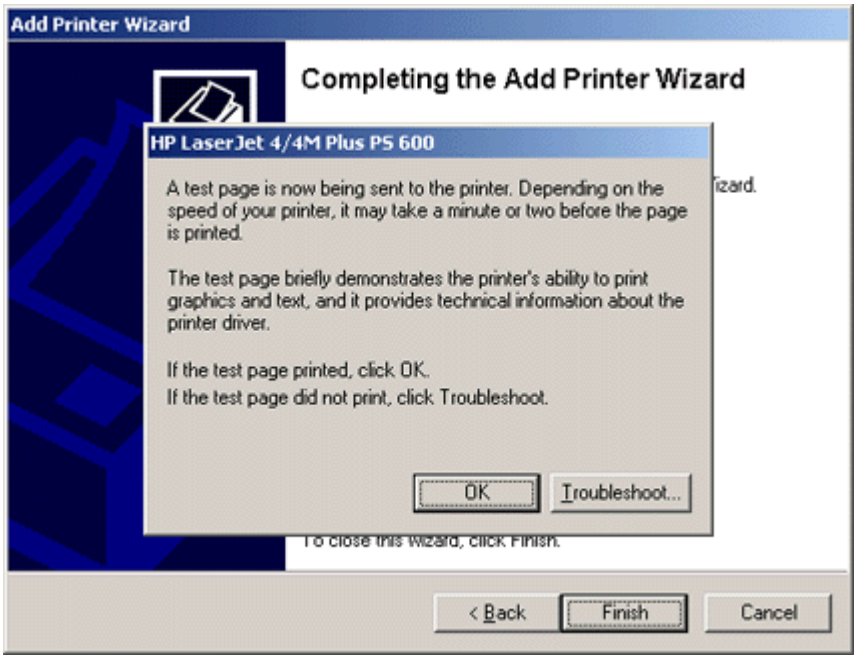
Add Printer Wizard
Completing the Add Printer Wizard
HP LaserJet 4/4M Plus PS 600
A test page is now being sent to the printer. Depending on the speed of your printer, it may take a minute or two before the page is printed.
The test page briefly demonstrates the printer's ability to print graphics and text, and it provides technical information about the printer driver.
If the test page printed, click OK.
If the test page did not print, click Troubleshoot.
OK
Troubleshoot...
< Back
Finish
Cancel

Fig. 30: Printer Wizard - check the result (test page)

Generate a test page to make sure that the printer is functioning properly.

Network printer

1. Log in as Windows XP **Administrator**
2. Click **Start**, select **Properties**, and then **Printers**

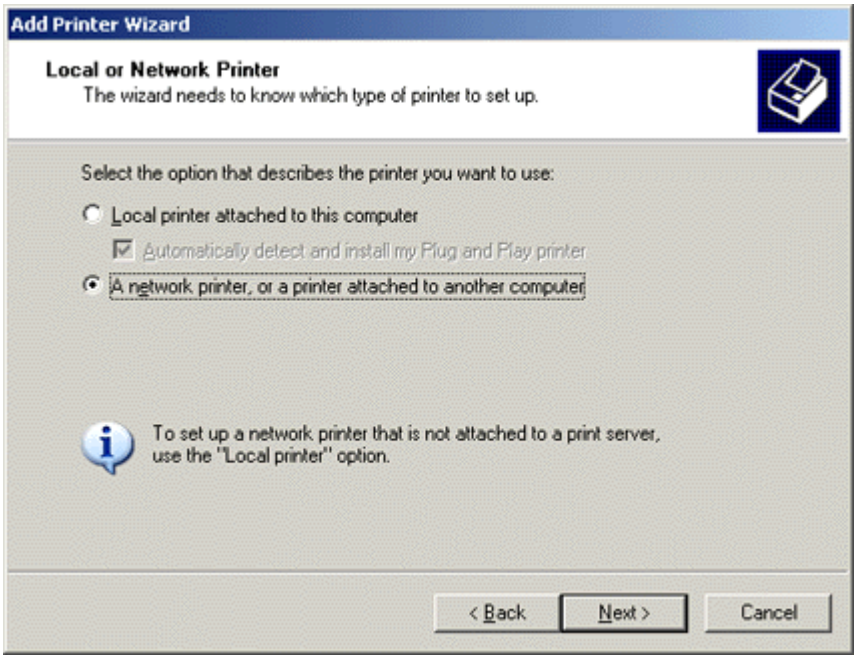
Add Printer Wizard
Local or Network Printer
The wizard needs to know which type of printer to set up.
Select the option that describes the printer you want to use:
Local printer attached to this computer
Automatically detect and install my Plug and Play printer
A network printer, or a printer attached to another computer
To set up a network printer that is not attached to a print server, use the "Local printer" option.
< Back
Next >
Cancel

Fig. 31: Printer Wizard - network printer

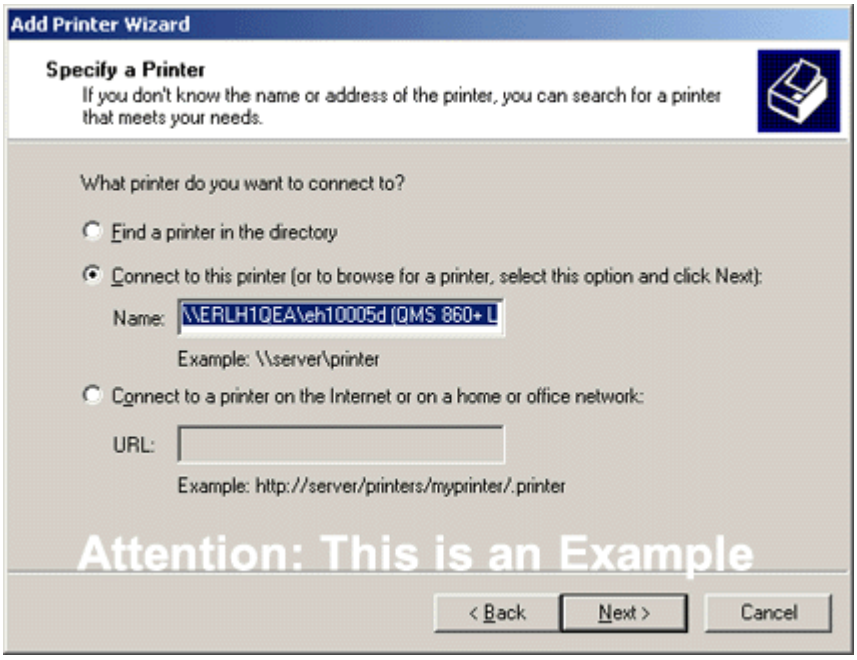
Add Printer Wizard
Specify a Printer
If you don't know the name or address of the printer, you can search for a printer that meets your needs.
What printer do you want to connect to?
Find a printer in the directory
Connect to this printer (or to browse for a printer, select this option and click Next):
Name:
\\ERLH1QEA\eh10005d (QMS 860+ L
Example: \\server\printer
Connect to a printer on the Internet or on a home or office network:
URL:
Example: http://server/printers/myprinter/.printer
Attention: This is an Example
< Back
Next >
Cancel

Fig. 32: Printer Wizard - Example of a network printer

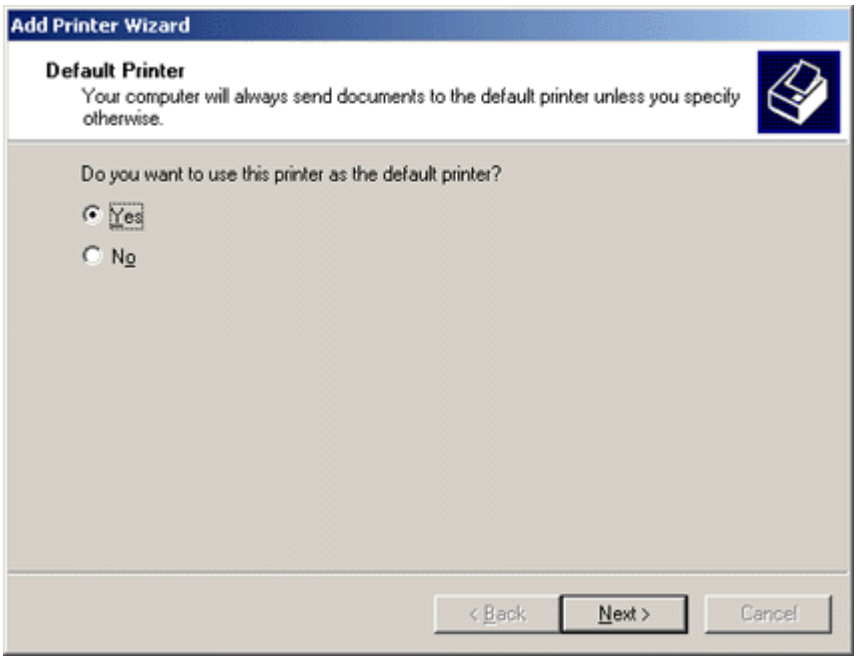
Add Printer Wizard
Default Printer
Your computer will always send documents to the default printer unless you specify otherwise.
Do you want to use this printer as the default printer?
Yes
No
< Back
Next >
Cancel

Fig. 33: Printer Wizard - use as default printer ?

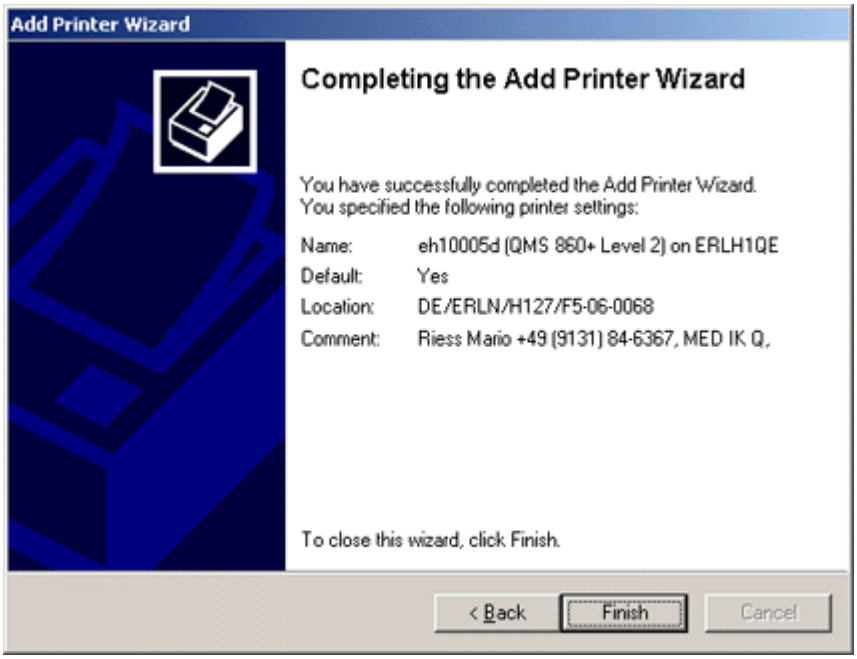
Add Printer Wizard
Completing the Add Printer Wizard
You have successfully completed the Add Printer Wizard.
You specified the following printer settings:
Name: eh10005d (QMS 860+ Level 2) on ERLH1QE
Default: Yes
Location: DE/ERLN/H127/F5-06-0068
Comment: Riess Mario +49 (9131) 84-6367, MED IK Q,
To close this wizard, click Finish.
< Back
Finish
Cancel

Fig. 34: Printer Wizard - finish and close the wizard

General

DICOM Print Device

A DICOM Print Device is a hardcopy camera (also called DICOM camera or DICOM printer) that supports DICOM Basic Print. The expression "DICOM camera" is used in this document.

Additionally Required Documents

The validity of the DICOM Camera connection depends on the modality and/or application.

The document **Installation and Startup Camera** (SPB7-250.814.20.xx.xx) is required. The document contains the list of released DICOM cameras, specific information on this modality, e.g., LUT's and image quality in conjunction with DICOM cameras. It also contains DICOM camera data on the type and special modality settings, if required.

The document is required, in particular to avoid data mismatching and/or loss of image quality. For this reason, some values are marked with the warning: "Do not change, unless otherwise noted." In this case, refer to the modality/application document.

Configuration for DICOM Print devices

This chapter describes how to configure a new DICOM camera into the syngo configuration.

Enter the configuration data for each DICOM camera separately, if applicable.

Refer first to the section “Collecting configuration data.” For additional information within the configuration menu, please click the “Help” button in the configuration mask.

- Log into “**Local Service**”.
- Select “**Configuration**” within the menu.
- Select “**DICOM/ Print Devices**”.
- Click “**Next**”.
  - ➪ The “**Host Properties**” menu will appear.

TCP/IP Settings for the DICOM Camera

Host Properties of the DICOM camera

- Click on the "**Select Host**" drop-down menu, select “**define new**” and enter the host name of the DICOM camera in the field “**Host Name**”.
- Enter the **TCP/IP** address of the DICOM camera.
- Select “**LAN**”.

Fig. 35: Print_devices_host

- Click “**Save**” to save the data.
- Click on "**OK**" and then "**>**".

General node properties of the DICOM camera

- Enter the “Logical Name” of the DICOM camera in the field “**edit Name**”.
  - ➪ The logical name is used as an identification within the DICOM Printer menu.
- Select “**Host**” and choose the previously defined host name for the DICOM Print Device (Host Properties).
- Click “**Save**”.

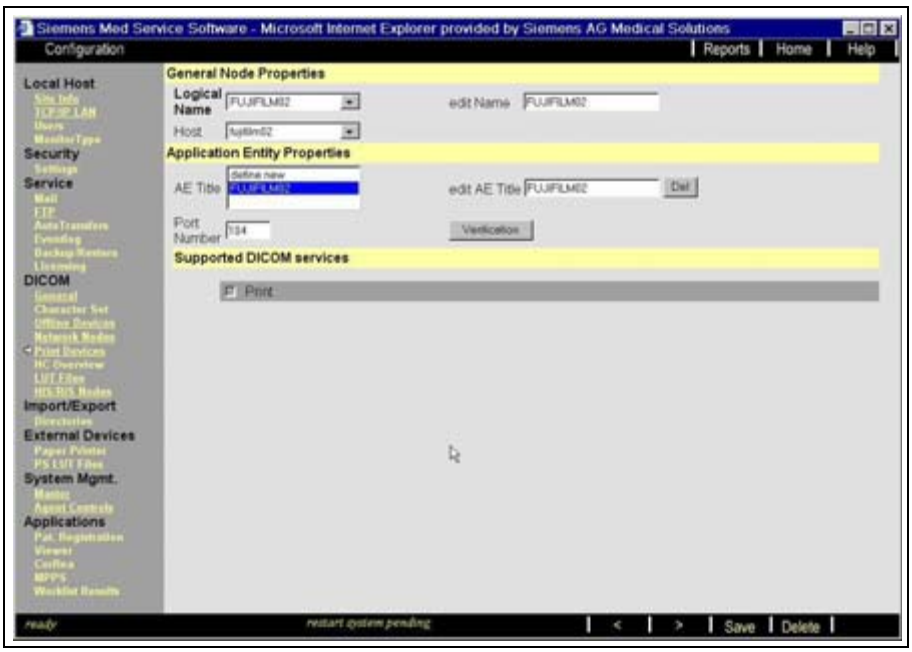

Fig. 36: Print_devices_properties

Application entity properties

- Enter the AE Title of the DICOM camera in the field “**edit AE Title**”.
- Enter the port number of the DICOM camera in the “**Port**” field.
- Click “**ADD**”.

NOTE

If you select an AET that is already configured, the Add button will change to the Del button, allowing you to delete this AET, if required.

- Select the created AE Title of the DICOM camera from the “**AE Title**” field.

Supported DICOM services

- Check the box “**Print**”.
- Click on "**Save**".
  - ➪ DICOM node properties successfully saved.
- Click "**OK**" and then "**>**"

Camera parameter settings

- Select the DICOM camera in the pull-down menu “**Select HC device**”.
- Enter the name of the DICOM camera in the “**HC Device**” field, which will be displayed in the customer user interface on the Print tab card.
- When the check box “**Default Camera**” is selected, the DICOM camera will be set as the default camera. The other DICOM cameras need to be selected from a pull-down menu on the Print tab card on the customer user interface.

Fig. 37: Print_devices_general

General settings

The general setting for each DICOM camera is described in "Specific Hardcopy Camera Information" (see Overview, Additionally Required Documents)

- Select “**DICOM Printer**” in the “**Type**” field for the DICOM camera.

  ➪ SPCI printers are not supported.
- Select the pull-down menu from “**Class**”. Select your DICOM camera type. A specific file for this type will be loaded, and the “**Filming Properties**” (see below) will be displayed.
- In the field “DICOM Node” the logical names of the DICOM cameras defined previously are shown. Select the appropriate DICOM camera.
- Enter the location of the DICOM camera. The information will be displayed in this configuration menu only.
- Enter comments, such as the help desk phone number of the DICOM camera vendor. The information will be displayed in this configuration menu only.

Filming properties

The displayed settings depend on the selected class (DICOM camera). See also Overview, Additionally Required Documents

Hold printed film jobs

- The most recent film jobs remain in the print queue, even after a film has been successfully printed. The number of films in the queue is defined here. Default setting = 10; max. = 10

Min. Density [1/100 O.D.]

- Set the minimum density value for the film used, default setting = 20; this value can be changed in increments/decrements of 1 (the maximum density value is modality-dependent and is set in the 'LUT files' menu).

Pixel Size [1/1000 mm]

- This is the pixel dot size specified for this DICOM camera. Do not change, unless otherwise noted.

Portrait / landscape film sheet formats

- All formats (media sheet sizes and orientation) specified for this DICOM camera are provided in these fields. Select film sizes and delete only those not available on site. Do not change (modify and/or add film sizes), unless otherwise noted.

Number of pixels [rows, columns]

- The number of pixels (rows and columns) specified for this DICOM camera are provided in this field. Do not change (modify number of pixels), unless otherwise noted.

Medium type

- The possible medium types are provided in this field: blue film; clear film; paper; default setting = blue film

Film destination

- The possible film destination 'magazine' or 'processor' is provided in this field. Select the film destination as specified by the local camera service; default setting = processor.

Color appearance

- The possible color appearance, 'Grayscale 8 bit'; 'Grayscale 12 bit' or 'Color 24 bit' is provided in this field. Default setting = **Grayscale 12 bit**. Do not change.

  Color 24 bit:

  ➪ In this case, the camera negotiates the "Basic Color Print Management" and transfers the pixel data in RGB photometric interpretation.

  8 bit gray scale:

  ➪ In this case, the camera will negotiate the "basic grayscale print management" and transfer the pixel data in photometric interpretation MONOCHROME2 with 8 bit pixel depth

  12 bit gray scale:

  ➪ In this case, the camera negotiates the "basic grayscale print management" and transfers the pixel data in photometric interpretation MONOCHROME2 with a 12-bit pixel depth (16 bits allocated for each pixel, e.g. for mammography images).

Background

- The background of the film can be set to 'black' or 'white'; default setting = black.

Transformation

Normally no transformation; in special cases, an additional transformation is required in the DICOM camera. The following values are possible:

- Replicate: the interpolated value is identical to the last pixel value
- Bilinear: the interpolated value is between (linear) the last pixel value and the next pixel value
- Cubic: the interpolated value is between (curve) the last pixel value and the next pixel value
- No magnification: leaves the image as is; default setting = no magnification. Do not change, unless otherwise noted.
- Click on "Save"
- Caution: Please wait for the message "device properties successfully saved."
- Click on "OK"; "Finish."

NOTICE

Deleting print devices

If a DICOM camera is to be deleted from the configuration settings, start the deletion with the last menu of the print device setup and go back to first menu. Otherwise, the error message "Option value warning: Invalid node could not be found" will be displayed.

➪ **To enter a new DICOM camera, always start with the first menu of the setup.**

LUT Files

This menu allows you to import, remove, and select LUT files (Look Up Table) for DICOM Basic Print. No tool is available for modifying a lookup table (LUT editor).

NOTE

The Presentation LUT has not been released for use.

GSDF will be supported for printing (Presentation LUT) only, but currently not for the monitor.

LUT Settings

The following are the default settings for Correction LUT.

The important setting for Mammography is the DXMGImage setting.

- Select "**DICOM/ LUT**" within the configuration menu.

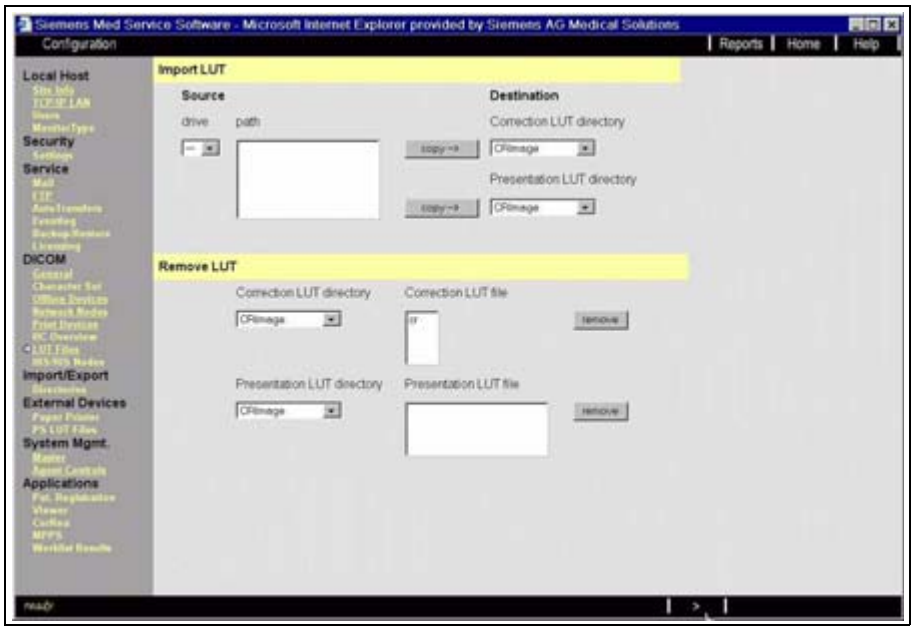

Fig. 38: LUT

- Click "**Next**".
- Mark the check box "**Correction LUT**".
- Enter the values as shown in the figure below.

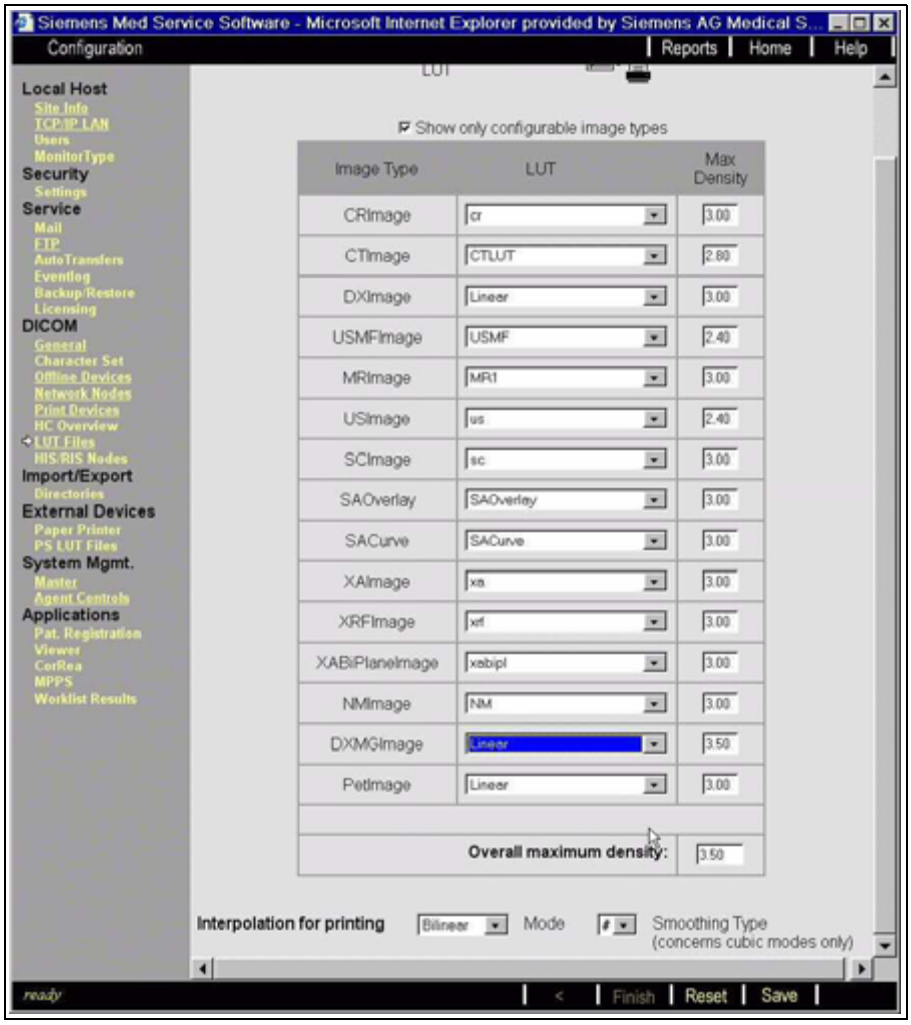

Fig. 39: LUT_table

Explanation of LUT

Correction LUT / Presentation LUT

- For an explanation, see Menu options (above). Special settings depend on the modality (see Overview, Additionally Required Documents) (Note: "Presentation LUT" and "Correction LUT" are logical names and do not correspond to each other in the different options; i.e., both presentation LUT's in the 2nd and 3rd options can have the same name but different contents).
- There may be 8-bit LUT's and 16-bit LUT's in the LUT selection box. This does not mean that one kind of LUT is made for 8-bit images and another for 16-bit images. This means that the 8-bit LUT's have only 256 values to describe the LUT. The 16-bit LUT has 65 KB and is therefore much more precise. The disadvantage of a 16-bit LUT is that it is quite large. For a correction LUT (camera is linear), the LUT is used only for the camera, NOT for the monitor. For a presentation LUT (camera and monitor are adjusted according to the Barten curve), the LUT is used for the camera and for the monitor.

Max. density

- This value is required for each LUT and is imported together with the LUT (do not change this default value, unless otherwise noted). This value will be used together with 'Overall maximum density' to scale the image presentation for each image per film sheet (Hint: the Min. Density value will be set once in the 'Print device menu').

Overall maximum density

- This value will be used to set the maximum required density on the film. Default setting = 3.00. (The overall maximum density value has to be equal to or higher than the "Max. density entries" for the different image types).

Interpolation for printing

- The complete film sheet is calculated in the modality and then sent to the DICOM camera (page mode). To fit the images onto this virtual film sheet, pixel interpolation is required. Do not change, unless otherwise noted.

  The following values are possible:

  Replicate: the interpolated value is identical to the last pixel value

  Bilinear: the interpolated value is between (linear) the last pixel value and the next pixel value

  Cubic: the interpolated value is between (curve) the last pixel value and the next pixel value

Mode

- The smoothing type factor can be selected for the cubic interpolation algorithm only (smoothing factors are 0, 2, 3, 4). Do not change, unless otherwise noted.
- Click on "Save" after making the changes.
- Click on "Finish."
- Click on "Home"; the system restarts automatically.

NOTE	**This may take some time.**

If the message "restart syngo pending" appears in the bottom status line, an application restart is automatic after the "HOME" button is pressed.

If the message "shutdown syngo pending" appears in the bottom status line, a system restart is automatic after the "HOME" button is pressed.

Confirm the warnings with "OK."

Siemens Remote Service

General information

Since MAMMOMAT Novation DR WH AWS VA11A is syngo based, the WH AWS shall be connected to “Siemens Remote Service.”

The "SIEMENS Remote Services" will support router or VPN connections only.

A VPN should be used via a broadband connection.

The project manager is responsible for implementing a router connection to the Siemens Remote Diagnostic server. If you have any questions about your pre-configured router from Siemens, please contact mailto:srs_final@med.siemens.de or your remote diagnostic technician. A detailed description of the SRS installation is available in the ’Software, SP00-000.816.02.02.02’ manual.

Procedure

The WH AWS must be connected to an ISDN router, analog router, or VPN in order to be able to access Siemens Remote Service. Configure the WH AWS as described below:

For a detailed description, see the document “Installation of Siemens Remote Service, SP00-000.816.02...," section on "SRS Configuration”.

- Enable remote access, “Limited Access, permanent” within the user interface “Option/ Service/ Remote Service.”
- Enter the local service/ “Configuration.”

- Select “**Service/ FTP**” and enter the FTP Host and IP address according to your time zone:

Global zone	Server location	Siemens Remote Access Server
Time zone I (Europe, Africa)	Fürth	Name: **LUX09505 / IP: 194.138.39.18**
Time zone II (America)	Newark	Name: **SRSACC1 / IP: 129.73.116.92**
Time zone III (Asia, Australia)	Singapore	Name: **SGPT806x / IP: 194.138.243.178**

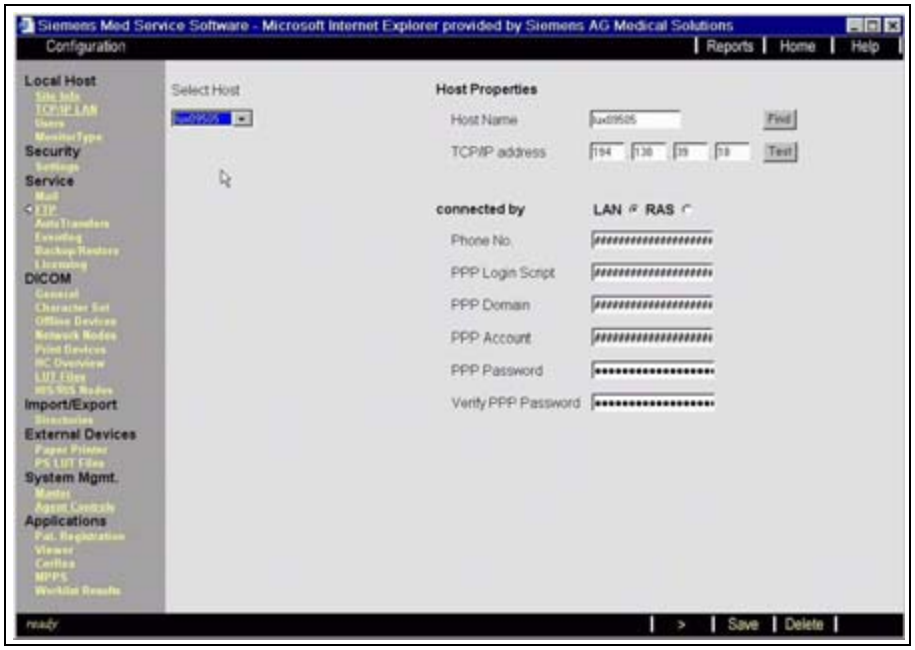

Fig. 40: FTP_Host

- Click “**Save**” and then “**>**”
- Enter **SRS_FTP** in the “**Logical Name**” field.
- From the selection bar, select the **FTP Host** you created.
- Enter **rdiagftp** in the FTP user field.

- Enter the password **siemens** twice.

Fig. 41: FTP_user

- Click "**Save**."
- Check routing (static route or routing over a gateway) from the WH AWS to the Siemens Remote Access Server.

  ➪ WH AWS and the router (ISDN or analog) or VPN in the same subnet:
  Configure a static route: local service/ Utilities/ Escape to OS:
  > route add -p "SRS environment" mask 255.255.255.0 "router IP address"
  e.g.fürth and ISDN router 192.168.237.254:
  >route add -p 194.138.39.0 mask 255.255.255.0 192.168.237.254

  ➪ WH AWS and the router (ISDN or analog) or VPN not in the same subnet:
  Enter the gateway IP address as described in the "Configuration" section of this documentation.
  The local administrator will configure the gateway for routing.

Run a connectivity test to the Siemens Remote environment.

- From the Service Software Home Menu, select Utilities -> Escape to OS
- Under Command, select NT Command Interpreter
- Within the NT Command Interpreter under Parameters, enter one of the following commands and execute it by pressing <CR> or clicking <GO>. The tracert program takes a while before the data is displayed. When the mouse is moved into the frame, the hourglass indicates that the program is executing.

tracert 194.138.39.22	Command executing from time zone I
tracert 129.73.116.94	Command executing from time zone II
tracert 194.138.243.178	Command executing from time zone II

System management

General information

The System Management functionalities are available (CA Unicenter) for the MAMMOMAT Novation from version VA11B onward (Syngo Version VD20 - Windows XP).

The MAMMOMAT Novation DR software contains the “Manage Node Package” for System Management. Configuration of System Management is therefore recommended.

CA Unicenter provides a software distribution function that enables the system software to be updated remotely; e.g., a virus pattern update.

In the future the System Management software will monitor the system performance for continuity.

The CA Unicenter servers are located within the SRS environment in Fürth and in Newark. SP systems connected to Singapore use the CA environment in Newark (see note "for sites within time zone III only").

Global zone	**Server location**	**CA Unicenter**
Time zone I (Europe, Africa)	Fürth	Name: **fthw9mva / IP: 194.138.39.22**
Time zone II (America)	Newark	Name: **SRSSQL03 / IP: 129.73.116.94**
Time zone III (Asia, Australia)	Newark	Name: **SRSSQL03 / IP: 129.73.116.94**
(*) ...No System Management Server is available in Singapore, systems in this zone report to Newark.		

Prerequisite

The SRS connectivity from the modality to the Siemens Remote environment of your time zone is available and tested. (refer to the document "Installation of SRS, SP00-000.816.02…”).

Particularly a wide band connection via VPN should be used.

For sites within time zone III only (Asia, Australia)

Ignore this section if the SRS router is entered on the SP system as the default gateway under the TCP/ IP settings.

If a static route is used from the SP system to access the SRS environment, then 2 static routes have to be entered as described in the document “Installation of SRS, SP00-000.816.02..., Chapter Configuration”. You can check the entry by entering command route print -p in the command interpreter (Escape to OS).

For SRS in Singapore	route add -p 194.138.243.0 mask 255.255.255.0 <IP_SRS_router>
For System Management Server, Newark	route add -p 129.73.116.0 mask 255.255.255.0 <IP_SRS_router>

Procedure

Before setting up the System Management functionalities the Siemens Remote environment must be reachable.

Connectivity Check

- From the Service Software Home Menu, select Utilities -> Escape to OS
- Under Command, select NT Command Interpreter
- Within the NT Command Interpreter under Parameters, enter one of the following command and execute it by pressing <CR> or clicking <GO>. The tracert program takes a while before the data is displayed. When moving the mouse into the frame, the hourglass indicates that the program is executing

tracert 194.138.39.22	Command executing from time zone I
tracert 129.73.116.94	Command executing from time zones II, III

NOTE

To establish the connection may need some time. As a result, the tracert program may time out. Repeat the tracert command and check the function again. Do not continue with the installation if the connectivity test fails.

Installation procedure

- Select Local Service --> Configuration,

- In the next window enable System Management in the option list and click <Next> twice.

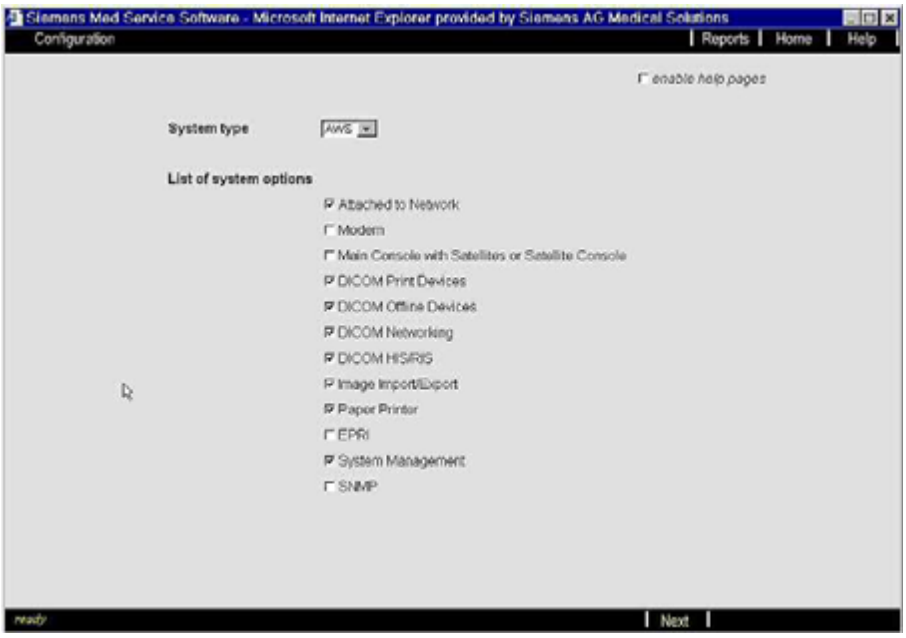

Fig. 42: SM_enable

- Enter Server Name and IP address of your System Management server of your zone

Global zone	server location	CA Unicenter
Time zone I (Europe, Africa)	Fürth	Name: **fthw9mva / IP: 194.138.39.22**
Time zone II (America)	Newark	Name: **SRSSQL03 / IP: 129.73.116.94**
Time zone III (Asia, Australia)	Newark	Name: **SRSSQL03 / IP: 129.73.116.94**
(*) ...No System Management Server is available in Singapore, systems in this zone report to Newark.		

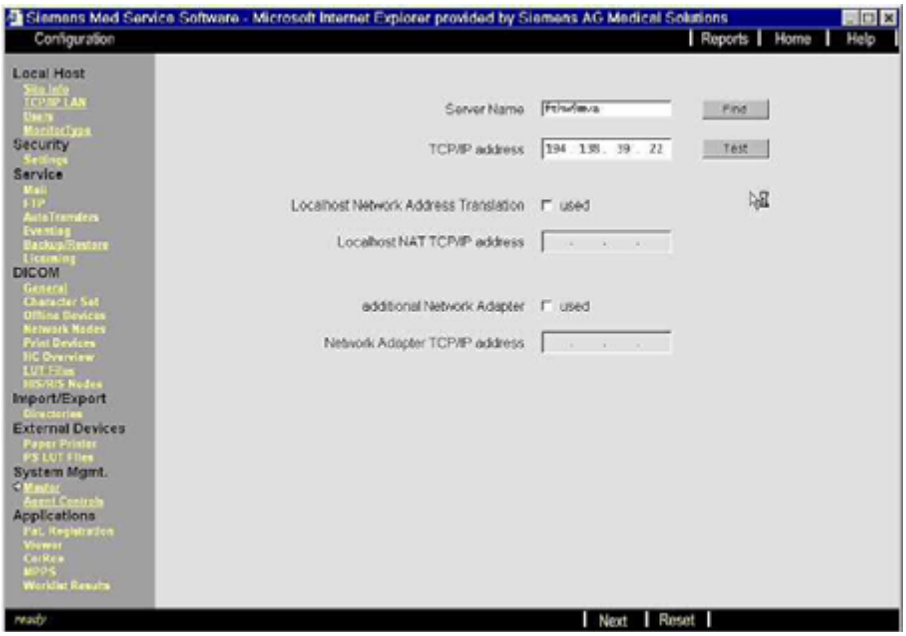

Fig. 43: SM_config

- If NAT (Network Address Translation) is used, enter the appropriate network address. If you are not sure, ask the SRS Help Desk.

NOTE

The SRS database can handle only unique IP addresses for modalities. For modalities in the field with identical IP addresses a pseudo IP address from the SRS Help desk will be created and handled with the NAT (Network Address Translation) tool.

- Click "**Next**"

- Check all boxes as shown and click on “**GO**”

  ➪ The System Management registration and installation of templates starts. This takes approximately 15 minutes.

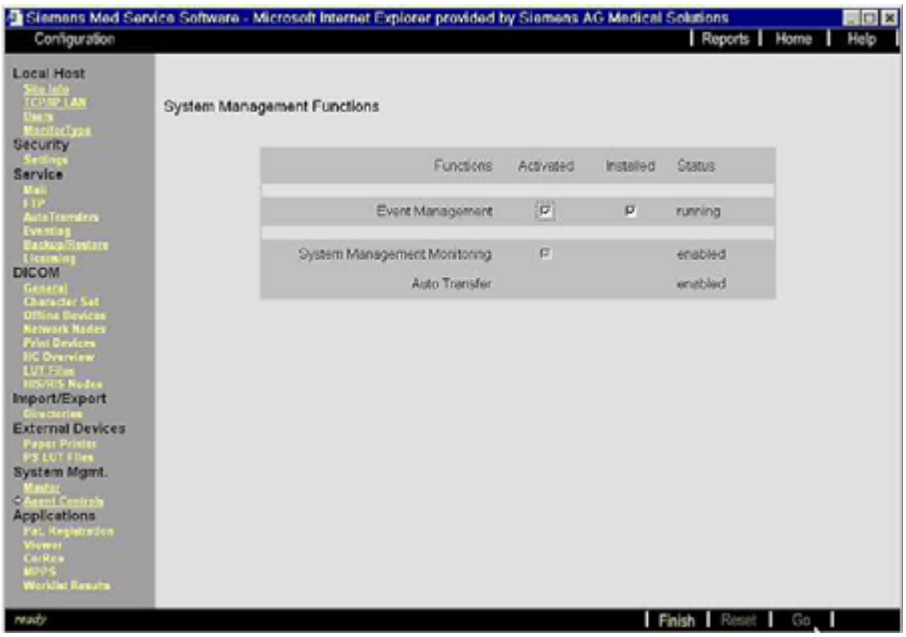

Fig. 44: SM_install

- After the installation is successfully completed, close the configuration menu and re-boot the system.

Troubleshooting

If the installation of System Management fails, the “Siemens Remote Access Server” or the “Software Distribution Server” are probably not reachable from your node.

Please check the following points:

- Reboot the system and try once again to configure the System Management.
- Make sure that the Siemens Remote environment is reachable. Do a tracert command as described in the “Connectivity Check” paragraph in this section.
- Check whether your system needs a static route or whether it routes over a gateway in the hospital. (refer to the document "Installation of SRS, SP00-000.816.02…”).
- Contact the SRS help desk for support.

Backup data

A backup of system-specific data, such as customer configuration entries, security settings, network nodes and AETs is always necessary after software updates or system adjustments.

NOTE **Database (patient images) backup is not possible. You can only save the patient images to a MOD, CD-R or an archiving system.**

Backup comprises:

- syngo configuration ("Configuration" under "Local Service")
- User Settings ("Options" -> "Configuration")
- Application Licenses (license.dat)
- Detector-specific files
- Security Settings

- From the syngo user interface, select **Options -> Service -> Local Service** in the Window menu.
- Enter the service key (6 characters in 2nd field).
- Confirm with **OK**.

  ➪ The Service Home menu appears.
- Select **Backup & Restore**.
- Insert the BACKUP disk either into floppy drive or the CD-RW.

  ➪ The Backup/ Restore menu window appears:
- In the **Command** selection menu, select **Backup**.
- For **Drives**, select the particular storage medium. As a standard, save to a diskette (-A-) or CD-RW (-R-). Network devices are supported as well.
- Select the **DXMG Mammomat** package and save via **GO**.
- Wait until the "Ready" message appears in the footer.
- Select the **Security settings** package and save via **GO**.
- Wait until the "Ready" message appears in the footer.
- Select the **SW Settings02** package and save via **GO**.
- Wait until the "Ready" message appears in the footer.
- Select the **WH_AWS_backup_restore** package and save via **GO**.
- Wait again until the "Ready" message appears in the footer.
- Exit the window with **Home**.
- Remove the backup medium either from drive A: or R: and archive it.

NOTICE

If subsequent changes (e.g. in the configuration) are made, the corresponding backup package must be saved again.

➪ **All dynamic data changes must be stored via this syngo BACKUP.**

Network Adapter Settings

General

Due to the many different types of network switch available and the different network adapters provided with the syngo hardware, the general default **"Auto detect"** configuration of the network switches and adapters doesn't work reliably and its use results in poor network performance.

Therefore, the recommended procedure is to configure the the syngo hardware's network adapter to a specific speed (Link Speed & Duplex) to avoid auto negotiation (e.g. 100Mbps/Full duplex).

This must be done on both sides of the syngo network adapter as well as on-site, at the corresponding network switch, for the existing network installation that is directly connected to it. It is therefore very important to consult the network administrator, since he or she is responsible for configuring the particular switch accordingly.

The link speed to be configured depends on the proposed transfer performance and on the recommended speed of the modality or syngo product. Please refer to the product's other start-up instructions, pertinent Speedinfos, or support center bulletins.

We assume that our network card's settings will be configured automatically by the "auto detect mechanism" between the card and the switch.

This mechanism often does not work!! The network switch is frequently not set to "auto detect," which may cause problems if our card is set to "auto detect".

The administrator password is therefore required. The customer's network administrator needs to be involved in the process.

Configuration

To change the network adapter settings, it is necessary to log into the operating system (Windows XP) as **"Administrator"**.

Click the "Start" button, click **Settings**, and then **Network Connections**.

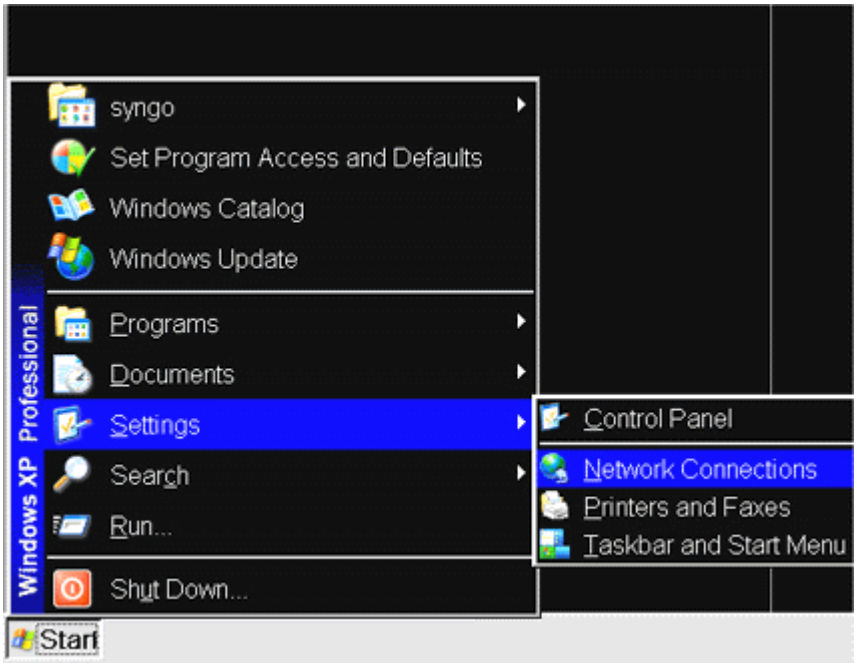

Fig. 45: Start -> Settings -> Network Connections

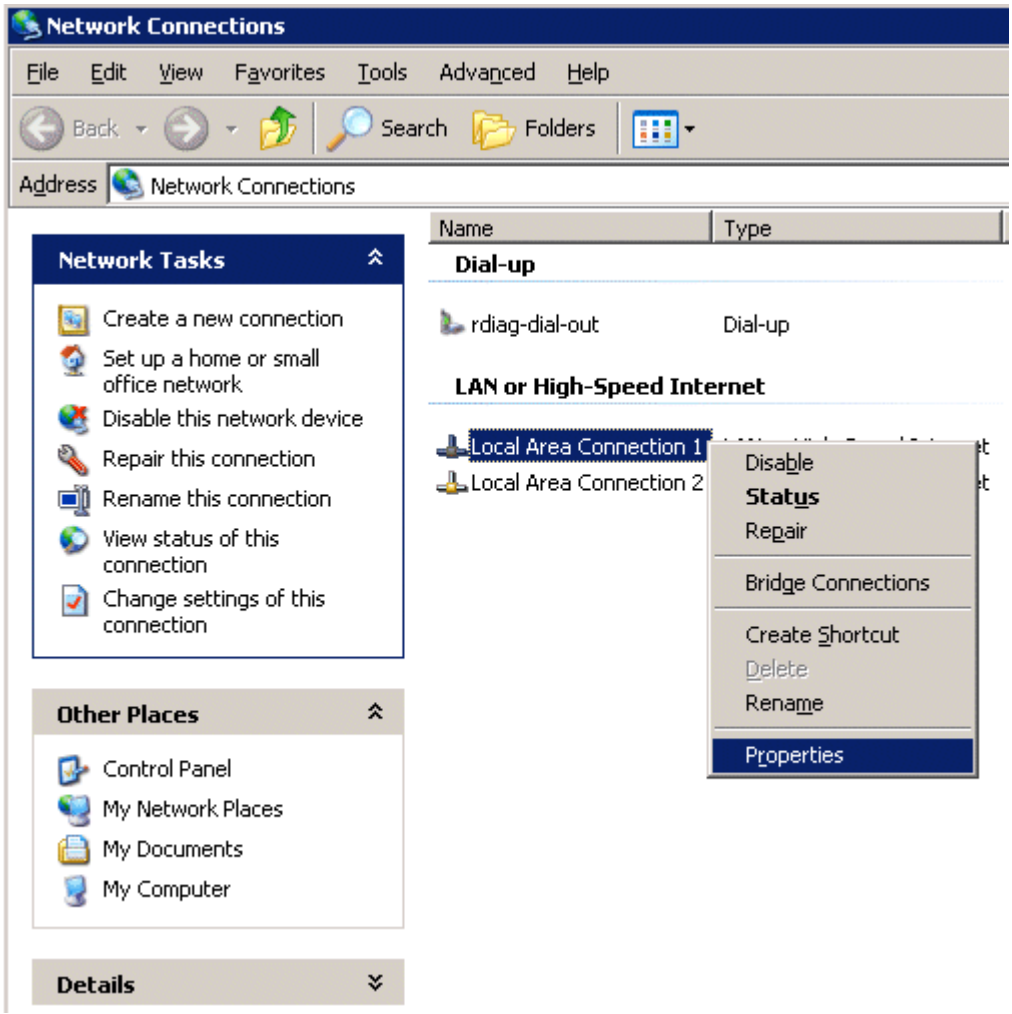

Fig. 46: Network Connection -> Properties

Within the Network Connection window please select the **LOCAL Area Connection** icon with the right mouse button, then select **Properties**

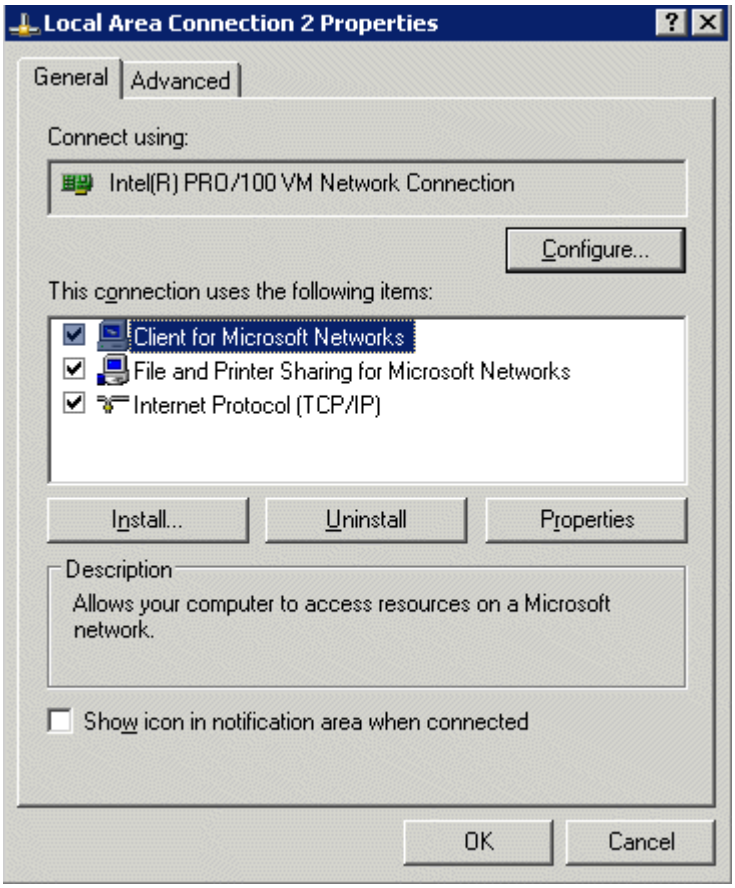

Fig. 47: Client Properties

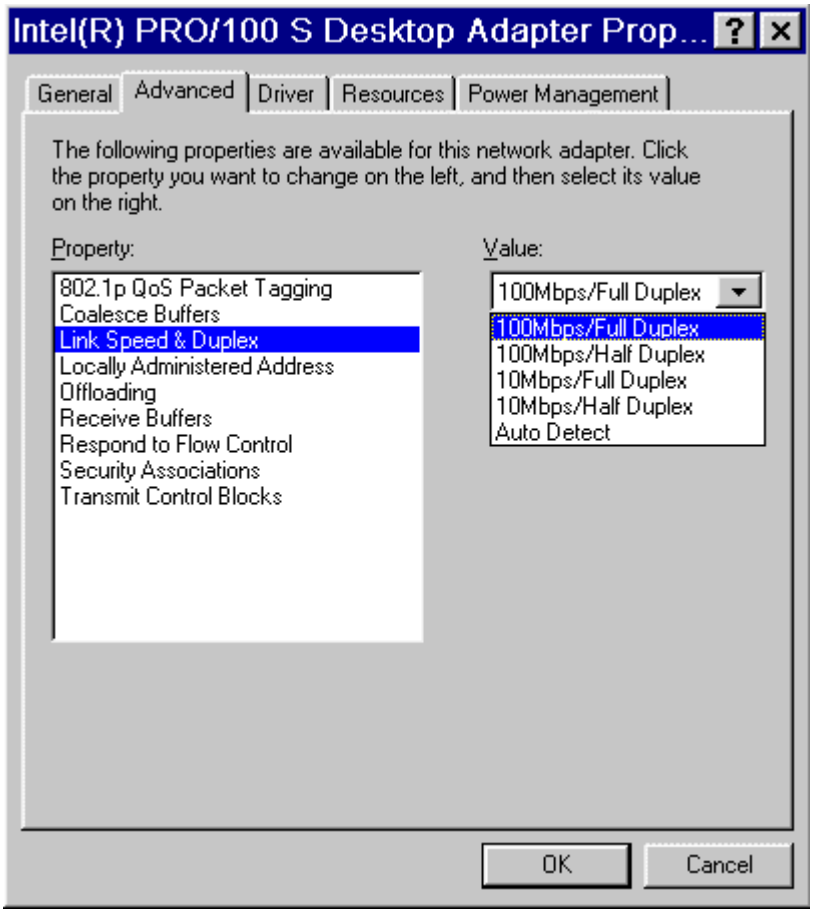

Fig. 48: Network adapter configuration - Link Speed & Duplex

In the **Local Area Connection Properties** window, click the **Configure** button below the name of the adapter model. This opens the network adapter properties configuration window.

Under the **Advanced** tab, find the "Link Speed" item in the **Property** box. In the **Value** selection box, select the proper speed. A system reboot may be required.

(This description applies to Windows XP as a platform for syngo VD20H and higher.)

⚠CAUTION

It is absolutely necessary for the corresponding port of the network switch to be configured to the same speed and duplex mode selected in the card's configuration.

➪ **Otherwise it will not be possible to establish a network connection.**

DICOM connectivity test information

General remarks

The DICOM configuration process is completed only when the interoperability has been tested. Executing a successful transfer and checking the required functionality on the destination device are part of this test.

The DICOM Acquisition Tool lists the minimum tests for each service. These tests are explained in this chapter. However, if the tests described in the startup instructions are available, they must be performed because they address the product's features more specifically.

The tests performed must be documented. Such documentation takes place automatically with the DICOM Acquisition Tool.

NOTE	**Note: The time requirements given here take only the normal test procedure into consideration. Troubleshooting and configuration are not included in these figures.**

When is a test necessary?

- A test is always required to determine whether DICOM data transfer between the products is functioning. Configuration errors and network errors must be tested for as well.
- When non-Siemens products are configured in, additional tests are absolutely necessary to check their interoperability.
- If a product combination (e.g. Leonardo, a non-Siemens archive) occurs more than once in the network, only the transfer needs to be tested. Interoperability need only be tested once.
- With Siemens-internal connections, only the transfer needs to be tested. In most cases, interoperability tests should have been performed at the factory.
- The test should be performed even when the product combination is already entered in the DICOM interoperability database.

The tests required for each DICOM service are described below:

Verification

This test is normally performed during configuration and does not have to be documented. It is primarily used for troubleshooting.

This service is launched from Service Tools, either in Configuration or via the DICOM Service Tools. It checks the network connection on the DICOM level (AET, Port Number).

Storage

Test Data

- Images should be used that have been generated from a particular modality or with workstation images sent from a modality to the workstation. Some images should be manipulated at the modality or workstation (distance measurement, annotation, invert, rotate).
- If possible, several studies with several series for a patient should be sent.

Transfer

- A connectivity check should be performed to determine whether the transfer of studies from or to the other DICOM nodes takes place without difficulties. If 'Auto Forward' is configured for a modality, a check must be performed to determine whether the images are automatically transferred to the configured destination.

Test Procedure

The support of a service technician for non-Siemens devices or a technician appointed by the customer is frequently required for the tests. Sufficient time must be allowed for scheduling the participation of these technicians.

Study & Series Sorting

- A test should be performed to determine whether a study is entered correctly into the database at the destination, i.e., whether it displays correctly in the patient browser (patient / study / series splitting). The complete transfer should be performed again to check how the patient browser reacts (dual entries?).

Display of Image

- If images are to be displayed on the destination device, open the transferred study and check whether the presentation of images is satisfactory (e.g. windowing) and whether the required image texts are displayed. The "invert" and "rotate image" manipulation functions should also be checked to make sure they work correctly on the transfer device.

Display of Overlays

- When displaying images, the overlays should be checked separately. The image manipulations (distance measurement, annotations) performed on the transfer device must be correctly displayed. With CT and MR, the cut lines in the topogram are transferred as overlay data.

Postprocessing

- If the customer wishes to perform postprocessing on the destination device, the transferred images are used for checking. This can include 3D calculation, subtraction (Angio), distance measuring, windowing, and rotate.

Time Requirement per Product Combination:

- The time required depends very much on the number and types of images to be examined. Appropriate images must be generated or acquired. Some images must be manipulated and re-saved. The support of the customer or the service technician is required for tests on a non-Siemens target device.
- The estimated time required is 1 to 2 hours.

Storage Commitment

Test procedure

Transfer

- A connectivity check should be performed to determine whether the Storage Commitment Transfer is performed correctly following the transfer of image studies from or to another DICOM node.

Display of Commitment Result

- At the transfer device, a check should be performed to determine whether the successful or even incorrect commitment response was correctly entered in the user interface. With syngo, this can be seen on the image level in the patient browser (under "Status").

Time Requirement per Product Combination

- The test time requirement can be disregarded.

Query/Retrieve

Test Data

- Several patients (see the patient browser) must be available at the query provider (destination system). The patient names should contain country-specific special characters (ä, ß).

Test Procedure

- **Transfer:** A connectivity test should be performed to determine whether the transfer of the Query Requests and Responses from or to the other DICOM nodes has been performed without difficulties.
- **SCU Receives Requested Attributes:** A test should be performed to determine whether Query (C_Find) has found the correct data sets and has indicated this. It must be taken into consideration that many query SCUs have a limit on the data sets (configurable).
- **Retrieve all Objects of Result List:** Afterwards, the examinations on the study, series and image level should be selected and imported (C_Move). The destination system will open a new DICOM Association and will transfer the images using the DICOM Storage Services.
- **Query by all Possible Attributes:** Here, all possible selections in the Query user interface should be checked (Wildcards *, Study Date, ...).

Time Requirement per Product Combination

- The estimated test time depends on the capabilities of the Query user interface and is approx. 1/2 hour per study.

Basic Print

A check should be performed to determine whether a transfer to a DICOM camera takes place without difficulties, using the specified formats.

Only approved cameras should be connected.

Test Data

- A film job with at least 2 film sheets should be sent to the camera.

Test Procedure

The support of the customer is needed to evaluate the image quality and should therefore be planned for the camera test.

Transfer

- A connectivity check should be performed to determine whether the transfer of film pages to the camera has taken place without error. If several devices print to one camera, these devices should send film jobs to the camera at the same time, including the device to be tested.

Receiving and Displaying Warnings

- During the transfer, a film cassette should be pulled out. It must be checked when and which error message is displayed on the local user interface.

Display of Images

- The image quality must be checked in collaboration with the customer. Are all required texts displayed?

Display of Overlays

- The image manipulations (distance measurement, annotations) performed at the transferring device must be correctly displayed. For CT and MR, the cut lines should also be transferred in the topogram as overlay data.

Time Requirement per Camera

- The required test time is approx. 1 hour as long as no changes to the configuration data are necessary, which should not be the case with approved cameras.

Modality Worklist

Test Data

- This test frequently requires the support of the customer, because studies for the modality need to be planned in the information system.

Test Procedure

Transfer

- A check must be performed to determine whether data sets are found on the HIS/RIS and are reported back without error. With a multiple worklist request, the data should not change in the scheduler.

Worklist Request by all Possible Attributes

- Under Option Configuration in syngo, it is possible to specify whether a search should be for a modality type (CT, MR, XA, ...) or the system (AET). In addition, selection of a time window is possible.

  With syngo, worklist requests can also be sent from the registration platform, whereby the search can be performed using the following attributes: patient's name, patient ID, patient's date of birth, Accession No., requested procedure ID, modality, scheduled performing physician's name, scheduled station name and start date / time.

  Depending on the customer's request, the appropriate worklist requests must be checked.

SCU Receives Requested Attributes

- The results of this test must be viewed in the context of those of the previous test. A check must be performed to determine whether the worklist responses match the request. Following each request, the scheduler must be deleted manually.

Worklist Attributes in Image Header

- With larger installations, certain attributes are employed in the subsequent workflow. To check whether these attributes have been correctly accepted into the image header by the HIS/RIS, images must be generated and sent. At the destination, a check should be performed to determine whether the attributes are filled in correctly.

Time Requirement

- The estimated test time is approx. 1 hour as long as studies were already planned in the HIS/RIS.

Modality Performed Procedure Steps (MPPS)

This test can be performed only in conjunction with the worklist test. The service technician must perform a study based on the modality worklist and then test whether the MPPS messages on the HIS/RIS were transferred. An additional study of the MPPS data must be performed by the customer (HIS/RIS Administrator).

The types of cases that can be tested in MPPS are quite diverse. The tests must first be clarified with the Project Manager; for example,

- how an **emergency patient** is handled (no patient data from the HIS/RIS using Modality Worklist),
- how an **append case** is handled (additional procedures that were not contained in the worklist) or
- how a **group case** is handled (combining several procedures in one scanning procedure)

Test Data

- All required boxes in both the registration platform (prior to the application) as well as the MPPS platform (after the application) must be filled in. Names as long as possible should be used and, depending on the country, should include special characters (e.g. ä,ß).

Test Procedure

Transfer

- A check must be performed to determine whether the MPPS data is successfully transferred to the RIS. It must be taken into consideration that MPPS data is transferred when the application is launched (Create) and terminated (SET). Both transfers must be successful.

RIS Receives all Required Attributes

- This test is very time-consuming and HIS/RIS-specific and can therefore be performed only by the customer. If problems occur, the Project Manager should usually be involved.

Time Requirement

- Estimated time requirement for transfer is approx. 1/2 hour.
- However, the time required for testing interoperability is several days, depending on the possible scenarios. This test should be performed by the customer.

Media Storage

Test Data

- Use images that were generated by the modality being tested, or if they are workstation images, images that were sent from the modality to the workstation. Some images should be manipulated at the modality or workstation (distance measurement, annotation, invert, rotate).
- If possible, several studies with several series for one patient should be sent.

Test Procedure

File Set READ

- A test must be performed to determine whether media that are generated on our own device can be read on the other device and vice versa. The following points must be taken into consideration: -Are all patients and studies displayed in the correct sequence? -Can the images be imported and displayed? -Are overlay data (distance measurement, annotation) correctly displayed?

File Set CREATE

- If new media are to be written to, a test must be performed to determine whether the patients and studies are written in the correct sequence and all desired image formats are written. In addition, the generated media are needed to test File Set Read on the destination device.

File Set UPDATE

- For this, a medium (CD-R, DVD, ...) with existing studies is needed, and the following tests have to be performed: -The contents of the original medium must be readable (like File Set Reader Test). -New images from the same and from other patients must be writable to the medium (Multi Session). -After the burn, all patients and studies must be available in the correct sequence. The images must be readable on our device and on non-Siemens devices as well if the latter are configured.

Example of a Calculation of the Estimated Time Requirement

In this calculation example, the times listed for tests in this chapter should indicate how much time is required for configuration and for the subsequent tests.

Here, the modality being tested is connected to one workstation, one archive and one camera, as well as to an RIS. The following conditions are assumed:

- All devices are available
- The service technicians who must connect the devices are present and will configure their devices at the same time
- The customer is available for the tests, whereby the MPPS tests are largely performed by the customer and are not taken into consideration here
- The configuration data are all available and correct
- The viability of the DICOM connection was checked during the acquisition phase or during the planning phase (Connectivity, Interoperability)
- Restart of the system is taken into consideration in the estimated overall configuration time

Device	Service	Role	Configuration	Test
Workstation	Storage	Send (SCU)	5	40
		Receive (SCP)	-	40
	Query/Retrieve	Initiate (SCU)	5	20
		Receive (SCP)		20
Archive	Storage	Send to (SCU)	5	20
		Receive (SCP)	-	20
	Storage commitment	Send (SCU)	-	10
	Query/Retrieve	Initiate (SCU)	5	20
		Receive (SCP)	-	20
Camera	Print	Send (SCU)	5	60
RIS	Modality Worklist	Request (SCU)	5	60
	MPPS	Send (SCU)	.	30
			30 min.	6 hours

This example shows that despite optimum preparations, and without errors in connecting the modalities, approx. 6 1/2 hours are required. If one takes simple troubleshooting into consideration, e.g. configuration errors, at least one day should be planned.

Connecting a MOD

The following SW adjustment is required for a MOD drive:

- Connect the MOD drive to the computer.
- Turn the computer on and insert a medium (e.g., 4.1 GB) into the MOD drive.
- Use syngo **Configuration** under **Options -> Service -> Local service** to configure the **offline device** (optical disk).
- Reboot the computer.

IP and port security

NOTE

It is not possible to reactivate IP security after it has been deactivated!

This would require a new software installation!

This has been the case since VD20J IP filtering via IP security policy was introduced. Therefore, all ports for each IP address are closed during syngo installation. Special ports are subsequently released for essential communication (e.g. DICOM, drive mapping, network name resolution). During service configuration, all defined IP addresses are released (e.g. Main/SatCon usage).

If it is necessary to free all ports due to problems evoked by the IP security settings, it is possible to switch IP security off by entering a command under Local service/Utilities/Escape to Os.

- ipseccmd.exe -u
- start cmd.exe /c setipsec.bat /remove

Chapter	Page	Changes
All chapters	n.a.	Updated to the latest version
Siemens Remote Service	all	Added for Siemens Remote Service and System Management.
Final work steps	all	Renamed with backup content